

AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, APRIL 26, 1834.

[VOLUME III.—No. 16.]

CONTENTS :

Mr. Burden's Boat; Chesapeake and Delaware Canal; A good Beginning; Survey of the New-York and Erie Railroad Route; The Liverpool and Manchester Railway; &c.....	page 241
Observations on Flame—Mr. Rutter's Late Discovery; Analysis of Oyster Shells.....	243
On Railroad Wheels, &c; Patent Improved Railroad Carriage Wheels.....	244
Important Discovery; The Banks of Newfoundland; Produce and Profits of a Farm; Salt; &c.....	245
Animal Mechanics, or Proofs of Design in the Animal Frame, continued.....	246
Blindness of Passion; Agriculture, &c.....	248
Literary Notices.....	252
Summary, Foreign and Domestic.....	252
Commercial Record, &c.....	254
Advertisements, &c.....	255
Poetry; &c.....	256

AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, APRIL 26, 1834.

MR. BURDEN'S BOAT.—In answer to various inquiries respecting this boat, we may say, after taking pains to ascertain the fact, that she will take her place in the North River line on or before 1st June.

The banks of the upper level of the Chesapeake and Delaware Canal gave way last Saturday morning, and the water of the canal nearly all escaped. This accident will compel the trading vessels between Philadelphia and the ports on the waters emptying in to the Chesapeake bay, to go round by sea as heretofore.

A good beginning.—Letters from Boston of the 17th instant, mention that the receipts on the 16th instant of the Boston and Worcester railroad, from passengers, were one hundred and fifty dollars.—The Locomotives now travel over the first ten miles of the road. It is expected that in a few days the whole of the first section will be completed and the travel extended to Needham.

Survey of the New-York and Erie Railroad Route. By J. S. To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

SIR,—I find in your Railroad Journal of Saturday last, the first object of notice contained therein is to the following effect:

"**SURVEY OF THE NEW-YORK AND ERIE RAILROAD ROUTE.**—A bill providing for this survey through the southern tier of counties, at the expense of the State, under a principal engineer to be appointed by the Governor, is now before the Legislature."

A railroad located as above described has long been a favorite object of my attention, and, as I apprehend, has, more than once, been a subject of observation in conversation with

you. I do conceive, if properly constructed, it bids fair to be ultimately the greatest thoroughfare in the United States, if not in the world. A slight knowledge of the country through which it must necessarily pass, the connection it will form between the waters of the ocean and the immense range of interior lakes, will give to it such a flood of business as must surpass any conception we at present can form an idea of.

I cannot, at the present moment, go into a minute description of the peculiarities of the formation of the ways now contemplated, but promise you to have it ready for insertion in your next number. It will possess the merit of entire singularity, if no other. But what will more particularly recommend it for adoption on this extensive route, is, that it is capable of being carried into complete effect at one quarter the expense of railroads on the construction of those now in use. Your obt. servt.

J. S.

Hoboken, April 23d, 1834.

The Liverpool and Manchester Railway. [From the London Mechanics' Magazine.]

We have been favored with a copy of the report made by the Directors of this Company, and find in it so much matter of fact that is of universal interest, on the subject of railways and locomotive power, that we need offer no apology for transferring it (with but little abridgment) to our pages. Mr. Grahame, and the other partisans of canal navigation, who still persist, with so much honesty and candor, in representing that the profits of this railway arise mainly from the conveyance of passengers, and that it cannot possibly compete with canals in the conveyance of goods, will observe in this report some rather stubborn facts on both these heads. The common-road steam-carriage charlatans too, who tell us that the expense of working a steam-carriage on a granite highway will be not more than *sixpence per mile*, and the tear and wear *next to nothing* (for "1,700 miles" at least), may learn from the circumstantial details here given of the actual expense of working such carriages on a railway, where the friction is many times less than on the best granite road than can be constructed, how much occasion they have to blush for the delusive representations they have sent forth to the public. We do not of course include in this class of public deceivers any of those honest and intelligent individuals—the Heatons, Hancocks, and Saxulas, of the day—who frankly subscribing to the undeniable fact, that there is more friction to be overcome on a common road than on a railway, have proposed to themselves to determine by experiment whether it would not be cheaper to work steam

carriages against that greater friction, than to be at the expense of laying down railways to avoid it—in some cases at least, if not in all. These last are adventurers of a very different stamp; they speculate on a particular result, which, though as yet unascertained, is neither impossible nor improbable; and as long as they pursue the reasonable object they have in view by honorable means, they shall command as they deserve our best encouragement and support.

LIVERPOOL AND MANCHESTER RAILWAY—FOURTH HALF-YEARLY MEETING.

LIVERPOOL, January 23, 1833.

Report.—The Directors, in submitting to the Proprietors a statement of their accounts and proceedings for the half-year ending 31st December, 1833, have to report a considerable increase in the general business of the concern, as compared with the corresponding six months of the previous year.

The total quantity of merchandise conveyed in the six months between Liverpool and Manchester was.....	69,806 tons.
To and from different parts of the line, including Warrington and Wigan.....	9,733
Between Liverpool and Manchester and Bolton.....	18,708
Total quantity conveyed.....	98,247
Quantity of coal from various parts to Liverpool.....	32,304
Ditto to Manchester.....	7,830
Total to Liverpool and Manchester....	40,134
The number of passengers booked at the Company's offices.....	215,071
The number of trips of 30 miles performed by the locomotive engines with passengers was.....	3,253
With merchandise.....	2,587
Total.....	5,840

Compared with the corresponding six months of the last year, the increase in merchandise conveyed has been..... 11,405 tons. In passengers 32,248.

The present winter has been in an extraordinary degree stormy and wet, which has no doubt diminished the amount of travelling.

The wetness of the season also has prevented the railway from being maintained in that complete order which is desirable; while the boisterous weather, with the dirty state of the rails, has impeded the passage of the trains, not unfrequently rendering assistant engines necessary to ensure their progress, even on the level parts of the way. These circumstances have unavoidably increased the charge for locomotive power. On the other hand, the navigation of the river, owing to the long continuance of tempestuous weather, being frequently dangerous, and sometimes impracticable, the utility and importance of the railway convey-

1st July to 31st December, 1833.

DISBURSEMENTS AFFORTIONED UNDER THE DIFFERENT HEADS OF EXPENDITURE.

ance have become more manifest and striking, and the natural consequence has been an accession of traffic to the Company proportioned to the required accommodation afforded to the public.

The following is a statement of the receipts and expenditures for the half-year; and the subjoined table exhibits a detailed classification of the disbursements.

Half-year ending 31st December, 1833.

RECEIPTS.		
Coaching department.....	£54,685	6 11
Merchandise do.....	39,957	16 8
Coal do.....	2,591	6 6
	£97,234	10 1

EXPENSES.		
Advertising Account.....	£6	10 0
Bad debt do.....	374	10 1
Coach disbursement do., viz., guards and porters' wages, 1,689. 4s. 6d.; parcel carts, horsekeep and drivers' wages, 361. 1s. 7d.; materials for repairs, 689. 12s. 6d.; men's wages repairing, 1,041. 1s. 3d.; gas, oil, tallow, cordage, &c., 196. 4s. 11d.; duty on passengers, 3,224. 11s. 11d.; stationary and petty expenses, 277. 4s. 5d.; taxes on offices, stations, &c., 116. 0s. 8d.; guards' clothes, 64. 15s.....	7,138	16 9
Carrying disbursement account, viz., agents and clerks' salaries, 1,728. 16s. 9d.; porters and brakemen's wages, horsekeep, &c., 5,006. 6s. 10d.; gas, oil, tallow, cordage, &c., 529. 17s.; repairs to jiggers, trucks, stations, &c., 366. 9s. 11d.; stationary and petty expenses, 429. 5s. 1d.; taxes and insurances on offices, &c., 456. 17s. 7d.; sacks for grain, 110. 3s. 10d.....	8,627	17 0
Coal disbursement account.....	82	0 9
Cartage (Manchester) do.....	3,173	18 0
Charge for direction do.....	312	18 0
Compensation (coaching) do.....	142	4 8
do. (carrying) do.....	223	10 11
Coach office establishment do, viz., agents and clerks' salaries, 302. 6s. 8d.; rent, 30. 6s. 8d.....	632	6 8
Engineering department acct. Interest do.....	319	3 4
Locomotive power do., viz., coke and carting, 3,197. 4s. 4d.; wages to coke fillers and waterers, 348. 8s. 5d.; gas, oil, tallow, hemp, cordage, &c., 865. 14s. 9d.; brass and copper, iron, timber, &c. for repairs, 3,755. 3s. 7d.; men's wages repairing, 4,401. 4s. 10d.; engine and firemen's wages, 784. 8s. 5d.; out-door repairs to engines, 613. 3s. 9d.....	13,965	8 1
Maintenance of way account, viz., wages to plate layers, joiners, &c., 2,937. 19s. 2d.; stone, blocks, sleepers, keys, chairs, &c., 2,411. 2s. 4d.; ballasting and draining, 925. 16s. 11d.; new rails, 150. 16s. 3d.....	6,425	14 8
Office establishment account, viz., salaries, 607. 2s.; rent and taxes, 75. 14s. 3d.; stationary and printing, 22. 7s. 8d.; stamps, 17. 2s. 3d.....	722	6 2
Police account.....	1,022	7 6
Petty disbursement do.....	61	19 6
Rent do.....	603	10 8
Repairs to walls and fences.....	665	3 4
Stationary engine and tunnel disbursement account, viz., coal, 302. 6s. 5d.; engine and brakemen's wages, 319. 11s. 2d.; repairs, gas, oil, tallow, &c., 419. 15s. 5d.; new rope for tunnel, 266. 3s. 6d.....	1,309	16 6
Tax and rate account.....	3,409	11 0
Wagon disbursement do., viz., smiths and joiners' wages, 718. 19s. 7d.; iron timber, castings, &c., 700. 9s. 1d.; cordage, paint, &c., 28. 5s. 2d.; canvas for sheets, 163. 6s. 5d.....	1,611	0 3
Cartage (Liverpool).....	80	17 10
Law disbursement.....	390	3 0
	56,350	1 9
Net profits for six months.....	£40,884	8 4

	Per Passenger Booked.	Per Ton of Merchandise Liverpool and Manchester.	Per Ton of Coal.	Per Ton on Bolton Tonnage.	Coaching Department.	Merchandise Department.	Coal Department.	Bolton Tonnage.	TOTAL.
	s. d.	s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Disbursements in the merchandise department, consisting of portage, salaries, parish rates, and insurance, £456 17s. 7d., carting, stationary engine, &c. disbursements.....		3 9		0 3		15,150 9 11		240 0 8	15,390 10 7
Disbursements in the coaching department, comprising portage, salaries, repairs, duty on passengers, £3,224 11s. 11d., &c. &c. Portage, &c. in the coal department, after deducting amount received for weighing coal.....	0 9				7,913 8 1				7,913 8 1
Locomotive power account, proportioned according to the number of trips of 30 miles in each department, comprising repairs of engines, wages, coke, &c. &c. Sundry disbursements, proportioned according to the receipts as between the coaching and merchandise departments, and according to the number of tons and miles conveyed, as between the Liverpool and Manchester and Bolton trade, comprising maintenance of way, police, and gate establishment, general office establishment, &c. &c.....	0 8	1 6			7,770 0 1	6,186 8 0			13,956 8 1
Rates and taxes, interest on loans, and chief rents, proportioned according to the amount of profit in each department, calculated exclusively of these items of disbursement.....	0 6	0 10	0 1	0 7	5,532 0 2	3,494 5 1	262 9 10	547 18 2	9,836 6 3
Total disbursements.....	2 6	6 10	0 4	0 11	27,345 8 3	27,357 9 3	755 5 0	891 19 3	56,350 1 9
Net profit.....	2 6	2 10	0 11	0 5	27,339 18 8	11,283 19 7	1,836 1 6	424 8 7	40,884 8 4
Gross receipts.....	5 1	9 8	1 3	1 4	54,685 6 11	38,641 8 10	2,591 6 6	1,316 7 10	97,234 10 1

Statement of Receipts and Expenditure on Capital Account, from the commencement of the undertaking to 31st December, 1833.

TREASURER, DR.	
To amount of joint capital in shares and loans.....	£1,086,885 0 0
.. Ditto of dividends not paid.....	1,087 3 1
.. Surplus in hand after payment of the sixth dividend, in August, 1833.....	395 10 2
.. Net profits of the concern for the half year ending 31st December, 1833.....	40,884 8 4
	£1,129,252 1 7
TREASURER, CR.	
By amount of expenditure on the construction of the way and the works, including the tunnel, excavations, &c. now in progress.....	1,089,818 17 7
.. Ditto in the hands of Moss & Co., bankers.....	28,476 11 9
.. Ditto in the hands of the treasurer.....	242 15 9
.. Ditto of arrears on calls.....	25 3 6
.. Ditto balance of book debts due to the company.....	10,688 12 0
	£1,129,252 1 7

During the past six months the excavation of the new tunnel from the vicinity of Waver-street lane to Lime-street has proceeded regularly and satisfactorily, and is now more than half completed.

In order to extend the advantages of a railway conveyance to the northern docks, and those parts of the town which are at a considerable distance from the railway station, the Directors transmitted a memorial to the Common Council, the Dock Committee, and the Commissioners of Sewers, proposing to construct, at the expense of the Company, a line of railway from Wapping to the Clarence Dock, by means of which merchandise deposited at the north end of the port might possess the same facilities of conveyance by railway into the interior of the country as goods in the southern portion of the town, besides relieving the streets from the noise and interruption of numerous waterside carts. This memorial, as might be expected, from the evident utility of the scheme, has been favorably received, especially by the Dock Committee, and the Commissioners of Sewers; the principal objection to the plan being that it was not sufficiently

general and extensive to afford to the public at large that measure of accommodation which appeared so easily practicable. The Directors, however, confidently look forward to the establishment on a comprehensive plan, probably to be undertaken by the Dock Trustees, of a line of railway with the requisite branches, along the dock quays from the northern to the southern extremities of the port; which measure seems alone wanting to give to the mercantile public those advantages of economy and despatch which a railway conveyance is so peculiarly calculated to afford.

The proprietors are aware that the subject of locomotive engines has always been one of great interest and importance. The charge under this head continues very heavy, arising in a great measure from the necessity of renewing and strengthening the frame work of the machinery; and from the purchase of copper and brass plates for the renewal of fire boxes and tubes.

The charge for coke has been a heavy item in the locomotive expenditure, amounting to nearly £6,000 per annum. The directors have lately been induced to try gas coke to a very considerable extent. The cost per ton is less than one-half the cost of Worsley coke; and although a greater weight is required to do the same service, and an extra consumption of fire bars and some other difficulties attend the use of it, the Directors have considered the experiment well worth making, in the hope of diminishing the expenditure in that department.

Several new schemes for an improved locomotive power have lately been brought under the consideration of the Directors. Past experience forbids any very sanguine anticipations of success in respect of untried speculations; at the same time, the Directors will not fail impartially to investigate the pretensions of any scheme from a respectable source, which professes to introduce improvement into so important a branch of the Company's establishment.

The charge for the maintenance of the way is another heavy item of the current expenditure. In particular parts of the road, especially on the descending lines of the inclined planes, the rails prove too weak for the heavy engines,

and the great speed at which they are moved; and from the breakages which have taken place, the Directors have thought it expedient to order a supply of stronger and heavier rails, to put down in those districts where the present rails have been found insufficient. This proceeding will in the first instance subject the Company to some increased expenditure. The Directors, however, have contracted (for the ensuing year) for that portion of the maintenance of way which consists of labor and small materials on terms of comparative advantage to the Company, which they expect will balance the increased outlay required for the purchase of stronger rails.

Observations on Flame—Mr. Rutter's Late Discovery. [From the London Mechanics' Magazine.]

SIR,—There is something very pleasing in applying chemical knowledge to the explanation of the various phenomena that are daily before our eyes. I now propose, with your permission, to make a few observations on the flame of a candle that is now burning on my table. I shall observe, at first, that the heat of the flame melts the tallow, which then ascends the wick by capillary attraction, and is in consequence subjected to intense heat; the tallow is next decomposed, and the principal part of the resulting gas is carburetted hydrogen, which is again decomposed in the following manner: When this gas is first formed, it expands in every direction, and thus getting into the hottest part of the flame, its carbon is deposited in an abundance of fine particles; the hydrogen now increases in volume three and a half times the bulk it possessed when in perfect chemical union with the carbon. This expansion, which is probably again more than doubled by the intense heat of the flame, causes the hydrogen to appear at the outer surface of the flame, where it unites with the oxygen of the atmosphere, and envelopes the white and luminous flame, or that part containing the particles of carbon, with a thin sheet of blue flame.

I now come to a very difficult part of this subject, which, I think, will, when satisfactorily explained, have a great tendency to illustrate Mr. Rutter's discovery of the advantage of burning water with coal-tar, which is by far the greater part carbon; the difficulty is, to account for the appearance of oxygen in the interior of the flame. Lord Bacon proved that flame would burn within the interior of flame; and Dr. Ure, in his *Dictionary of Chemistry*, relates a similar experiment, and gives the following definition of flame, founded on the researches of Sir H. Davy: "The flame of combustible bodies may, in all cases, be considered as the combustion of an explosive mixture of inflammable gas, or vapor, with air." It may seem very presumptuous in me to differ with such authorities as Davy and Ure, but my defence is, that I regard truth more than all the authorities in the world. I question the truth of the above definition of flame on this ground, that the flames of "explosive mixtures" give no light, but afford merely a feeble blue flame. This is the case with explosive mixtures of coal-gas, oil-gas, and indeed all gases containing carburetted hydrogen or olefiant gas; surely, then, the flame of a candle, or of olefiant gas from a small aperture, exhibits phenomena very different from the combustion of an explosive mixture. After giving the aforementioned definition, Dr. Ure says, alluding to flame: "It cannot be regarded as mere combustion at the surface of contact of the inflammable matter. This fact is proved by holding a taper or a piece of burning phosphorus within a large flame made by the combustion of alcohol. The flame of the taper or phosphorus will appear in the centre of the other flame, proving that there is oxygen even in its interior part." This is, in my opinion, no proof whatever of oxygen being in the interior part. There may be carbonic acid, or

there may be vapor of water, &c.; and what confirms this conjecture, is the well known fact that carbon can decompose carbonic acid, or at least unite with one atom of its oxygen, thus forming carbonic oxide; for carbonic acid is composed of one atom of carbon and two atoms of oxygen. Carbonic oxide may therefore decompose the vapor of water formed by the union of the hydrogen with the oxygen of the atmosphere, or carbon itself may decompose the vapor of water; this latter is my opinion. But, it may be asked, how does the vapor of water find its way into the interior of flame? In the case of the candle-flame, I apprehend, it is by the union of the hydrogen with the oxygen of the atmosphere at the surface of the flame; and I have before explained that the expansion of the hydrogen, when the carbon is deposited, is the cause of its being projected with considerable velocity to the outer surface of the flame. When the hydrogen thus unites with the oxygen, water is formed, which being immediately subjected to extreme heat, expands with great velocity into vapor, which is projected, not only into the interior of the flame, but from the sides where it is formed. The carbon decomposes this vapor, and, by uniting with its oxygen, hydrogen is again formed, which may be repelled by the sudden expansion, which it must have when the carbon seizes the oxygen, to the exterior of the flame, where, uniting with oxygen, it may again return to the interior—and thus play backward and forward many hundred times in a second. This play of affinities would, however, soon cease, were not the supply of hydrogen kept up by the continual and first decomposition of the carburetted hydrogen. That vapor is projected from flame is proved when I hold the point of a pair of cold steel snuffers within, say three-eighths of an inch of the flame, by moisture being deposited; but the particles are so fine, and in so small quantity, that a dull appearance only of the steel results, which quickly vanishes on their removal. Should the snuffers be held very near the flame, small drops of water will appear on their removal. As this deposition of moisture takes place when the snuffers are held under the flame, and at a distance of perhaps one-fourth of an inch, I conclude it to be projected with considerable velocity, in the manner before pointed out, from every part of the flame; and I further consider that this atmosphere of vapor may, in some measure, account for the luminous halo which appears to surround the flame of a candle.

There are many other considerations which induce me to believe the above conjectures to be nearly right. One is, that if carburetted hydrogen be mixed with a very small portion of common air, its power of giving light is impaired, for part of the carbon is then burnt in its gaseous combination. Another circumstance that induces me to question the presence of oxygen in the interior of the flame of carburetted hydrogen, is the fact, that a small portion of carbon, when deposited on a small fibre of the wick of a candle, will remain in the white part of the flame without undergoing decomposition. Now, if oxygen were present in an uncombined state, and at such an elevated temperature, who can doubt that an immediate decomposition of the carbon would take place? But, it may be asked, why does not this portion of carbon decompose the vapor of water which you consider to be present in all flames containing hydrogen? One cause may be that the particles of which it is composed attract each other with part of their force, and cannot therefore exert their full force to decompose the vapor. That coal-tar cannot be burned like oil, is because it is nearly all carbon, and has not sufficient hydrogen to form the requisite quantity of vapor—what it does possess being only sufficient to supply part of its carbon with oxygen; the other part of the carbon deposited rises from the flame in dense black smoke. It may be further inquired,

why does not the black smoke, or the carbonaceous particles arising from a hot flame, unite with the oxygen of the atmosphere, and so form carbonic acid, which is invisible? I apprehend it is because of their low capacity for heat, and the instantaneous radiation of heat from their surfaces; the particles being thus deprived of their heat cannot unite with oxygen, which is also cold—for the union of carbon with oxygen will not take place under a dull red heat. Is it possible, then, to burn coal-tar without producing smoke? Nothing is more easy to a person possessing a slight knowledge of chemistry; let a long tunnel of fire-brick be constructed, leading to a chimney, and let a coal fire be lighted till the sides of this tunnel become of a white heat; if a small stream of coal-tar be now introduced, it will inflame, and as the particles of carbon deposited cannot lose their heat, and will be floating in a strata of air heated to redness, their union with oxygen must take place, provided sufficient air be admitted with the stream of coal-tar.

I shall now conclude with a few words on Mr. Rutter's project of introducing a small quantity of water with the tar. The water will first be formed into vapor, which will require some portion of heat; now this vapor may be decomposed by the carbon, when the hydrogen will again unite with the oxygen of the atmosphere, and vapor will again be formed, till the decomposition of all the carbon is complete. Perhaps two gallons of water is more than one gallon of coal-tar could be made to decompose, and it would be very gratifying to me to see the actual fact proved by experiments so conclusive as to satisfy the doubts of the most sceptical. Your Salisbury correspondent states, that "15 lbs. of coal-tar," which I suppose is about equal to an imperial gallon, "and an equal bulk of water," say 10 lbs., "and 25 lbs. of Newcastle coke, will be found equal to 120 lbs. of Newcastle coal." But this is on the supposition that the whole of the water will be decomposed, which I consider a practical impossibility, for a large portion of the carbon must unite with the oxygen admitted to inflame the hydrogen.

Should Mr. Rutter, however, have formed too high an estimate of the heat gained by his process, there are other advantages attending it which must not be overlooked; for two intense chemical actions are supported with the same volume of air that either of them would require separately, which is of great importance in its application to steam boilers. Your Salisbury correspondent has certainly blundered in endeavoring to explain this. (See his paragraph, page 452, beginning with "Another condition," and ending with "gases.") He is also wrong in saying, (page 453), "The sides of the furnace in that vessel formed a part of the boiler, consequently their temperature never exceeds that of the contained water." How then is the heat communicated, if both sides are of the same temperature? According to my experience, the sides of boilers are often many hundred degrees hotter than the contained water, and sometimes red hot just at the outer surface.

I have no other object in making these remarks than to elicit truth, and prevent scientific men from trusting too much to "hope's delusive mine." I remain, sir, your obedient servant,
WILLIAM WITTY, Jun.

ANALYSIS OF OYSTER SHELLS.—One hundred grains of oyster shell will give Carbonate of Lime, 95.18; Phosphate of Lime, 1.88; Silica, 0.40; Water, 1.62; Insoluble animal matter, 0.45; Loss, &c. 0.46. From this view of the composition of recent oyster shell, it is obvious that no appreciable advantage can be expected in applying it as a manure from the minute proportion of animal matter which it has been shown to contain. It is as a carbonate of lime, and that nearly in a state of purity, that it should claim the attention of the agriculturist.—[Farmers' Register.]

On Railroad Wheels, &c. By Wm. M. Cushman. To the Editor of the Mechanics' Magazine and Register of Inventions and Improvements.

SIR,—There are few applications of science which make such continual and importunate calls upon its resources as the subject of railroads—its principles having place as well in the minute, as the more prominent parts; and to such an extent does this obtain, that, although casuists might dispute the endowment of sensibility, we may with some propriety credit the "sympathy" which subsists among its various constituent parts.

To those of your readers who know the important part the appendage, which forms the subject of this paper, acts in the successful operation of a railroad, no apology for its appearance would be proper or necessary. Impressed, however, with the belief that, in matters of science, nostrums and secrets are the peculiar property of empiricism, I am persuaded that liberality, to a certain extent, among engineers, in a mutual interchange of ideas through public journals devoted to such objects, will be attended with the most beneficial results to the profession and its members generally—it is the hope of contributing a trifle to such result, which induces me to send for publication, the subsequent compilation from my common-place book.

The problem assigning to the parts of the wheel the proportions requisite to sustain a given stress, has been investigated;* but as I have never seen any discussion touching the particular distribution of metal to obtain the requisite strength with the least quantity of metal, and at the same time to offer the least resistance to motion, after briefly reciting the mode of proceeding in order to attain the single condition of strength, I propose to examine that necessary to the attainment of the latter conditions.

To determine the dimensions of the rim, arms, &c., consider them rectangular prisms, calculate the stress these prisms will bear; and lastly, dispose them in the best form for strength and motion on the various parts of the line.

Each arm must be of sufficient strength to bear the greatest stress that can ever fall upon it, which is half the weight of the car and its load; then this formula holds,

$$\frac{S}{2200} = a; (1.)$$

in which S is put for half the weight, and a for the surface in inches of the section of the arm.

In the rim this formula holds,

$$t = \sqrt{\frac{c \times S}{850b}}; (2.)$$

in which c = the length of the arc between the arms, in feet, at the mean diameter of the rim; S, as before; b = the breadth of the rim, in inches; and t = the thickness of the prism, in inches—to be disposed in the best form for strength and for the rim. The formula (2) is general, but the other is affected by the number of arms; it is designed for a 3 feet wheel, having 10 arms, or a 5 feet wheel, having 12.

But since, in rolling bodies, each particle of matter resists motion in proportion to the square of its distance from the axis of motion, it is evidently an object of the first importance to dispose of the weight of metal as near the axis of motion as is consistent with strength, safety, and the perfection of the wheel in other respects.

To illustrate the effects of this principle, let

* Vide Tredgold on Railroads. Science is deeply indebted to this author: his work on railroads, however, published in their stunted infancy, although in many particulars sound, is in others behind the age; it has the merit of having been a pioneer—of having denominated by a rigorous application of scientific principles, the absurdities which at that period entangled the subject. It is in our own country that many of its most important principles have been developed, with a rapidity corresponding with the fertile genius of our countrymen, and the impetus and zeal every object to which they direct their attention receives.

the weight of a car and its load be 3 tons, and suppose further, that a wheel of 3 feet diameter is the height most suitable for the road it is to run upon. Now, if it be desired to sustain a given constant weight by a prism of a given breadth, supported at each extreme, it is manifest that, as the distance between the supports is increased, the depth of such prism must likewise be increased in a certain ratio; and vice versa. This condition is expressed in formula (2), in its true ratio—hence, in increasing the number of arms, we diminish the weight of the rim, and effect a transfer of metal towards the centre of motion; and this may be done without injury to the wheel in any respect.

I shall in the first place assume formula (1) to be general, to illustrate the effect resulting solely from the change of place of the metal from the exterior towards the interior.

Excluding the part of the radius occupied by the nave and rim, the quantity of metal for an arm will be 19.92 cubic inches, and on the hypothesis of 10 arms, the surface of a section through the rim will be 4.090 inches; but on the hypothesis of 9 arms, the sectional surface is 4.315 inches: hence the volume of the rim for 10 arms is less than that for 9, by 25.5 cubic inches.

These preliminaries made, in order to effect a comparison of the efficiency of the two wheels:

Let the prism representing the volume of any arm be divided into an indefinite number of equal parts, by planes cutting it orthogonally, and m = one of these parts; let also r, r', r'', r''', &c., ad infinitum, be the respective distances of these quantities from the axis of motion, and x = the sum of the rectangles of the subdivisions into the squares of their respective distances from the axis: then, by the law, we get

$$mr^2 + mr'^2 + mr''^2 \text{ \&c. ad inf.} = x;$$

which expression, since each term is affected by the same quantity m, becomes

$$m(r^2 + r'^2 + r''^2 \text{ \&c. ad inf.}) = x; (3.)$$

In assigning a value comparatively small to m, we shall have for all practical purposes the value of x: thus, let $m = \frac{1}{36}$ of the mass of the arm, which (taking the diameter of the nave 5 inches, and considering the last half inch of the arm merged in the rim,) is represented by 19.92: then, r, r', r'', &c. become 1, 2, 3, 36; and,

$$\frac{19.92}{36} (6^2 + 7^2 + 8^2 \dots 35^2) = 9864 = x. (5.)$$

Again, since the matter in the rim lies in a circle described about the axis, it is at every point equally distant from the axis; its mass, therefore, drawn into the square of its distance from the axis, will be its moment of inertia: hence,

$$\frac{36^2}{2} \times 25.5 = 33048 = x'; (6.)$$

wherefore, the relative resistances to motion of the means used to attain the same end, in the two wheels, are as

$$x : x' :: 1 : 3.35.$$

2d. But the mass of each arm may, in general, be diminished in the ratio of the increase of number to that contemplated in formula (1), in consequence of conditions entering therein.

The value of x (form. 5) is reduced by the addition of a single arm, $\frac{1}{9}$ for each arm; their sum being 9, gives x for the total diminution in resistance to motion offered by each, which in amount is just sufficient to make the new arm; whence the relative moments are as

$$x : x + x' :: 1 : 4.35;$$

if the number be increased to 11, the relative moments stand thus,

$$1 : 6.94;$$

if to 12, thus,

$$1 : 9.62;$$

and so on for a greater number.

Such are the results when the principle of momentum of inertia enters as a condition in the determination of the problem.

Extending this principle, we see that the wheel of greatest efficiency with the least quantity of metal would be one without spokes, i. e. having a sheet of metal extending from the nave to the rim: but the limit to the number of arms will be attained when the rim has such a thickness that, when further reduced, there would be danger of fracture from other causes than the stress it is to bear.

I shall not extend my remarks further. By those acquainted with subjects of this nature, the consequences which flow from them will readily be appreciated. My aim has been not to define with precision the exact form necessary in practice, but to illustrate the importance of introducing the principle of momentum of inertia; and to indicate, in a general manner, the changes which ought to be made in the ordinary form, from its introduction.

WM. M. CUSHMAN, C. E.

Albany, April 14, 1834.

AMERICAN PATENT—Specification of a Patent for Improvements in the Wheels of Railroad Carriages. Granted to JOHN ELGAR, Civil Engineer, City of Philadelphia, November 19, 1833.

To all whom it may concern, be it known, that I, John Elgar, Civil Engineer of the city of Philadelphia, have invented certain improvements in the wheels of railroad carriages, by one of which improvements they are made to adapt themselves more readily to curved roads than such as have been heretofore used for that purpose; and by the other a construction is given to them which will render them more firm and durable than those now in general use; and I do declare that the following is a full and exact description of my said improvements.

The self-adjusting conical wheel for running upon curved roads is well known to engineers, it having been made the subject of a patent by Mr. James Wright, and a modified form of it being now used on the Baltimore and Ohio railroad. The plan which I have devised is a new modification of this principle, by which some of the inconveniences which have hitherto attended its employment are in a great degree, if not altogether, obviated.

Instead of making the wheel conical on its whole tread, like Wright's, or of forming the conical part against the flanch, and leaving the other part cylindrical, as in those used on the Baltimore road, I form the cone on the outer part of the tread of the wheel, opposite to the flanch, leaving that part of the tread which extends from the flanch towards the opposite side cylindrical, or nearly so, for one half of its width, more or less, and then tapering outwards in such degree as may be most convenient, according to the curvature of that part of the road which has the smallest radius.

The curved part of the road is adapted to these wheels, by widening the track in proportion to the radius of curvature, so as to admit the conical part to roll on the interior rail, whilst the cylindrical part bears upon the exterior rail. This construction obviates the objection arising from the wrong tendency of the cone when running on the exterior rail, and adapts the whole more perfectly to those parts of the road which are straight, and produces other advantages, which will readily occur to experienced engineers.

In order to render railroad wheels more firm and durable than those now in use, I form that part of the wheel usually occupied by the spokes of two plates of iron, preferring for this purpose thick sheet iron of three eighths of an inch, more or less, in thickness. These sheets of iron are raised so as to be concave, or dishing, forming the segments of a large sphere, or, if preferred, they may be made conical. These plates have a hole in their centres to receive the hub, or nave, and have a flanch turned up, over which the hoop of the hub may pass; or, if preferred, the hub may be secured in other ways. If the rim or tire

is of wrought iron, the plates may have a flanch turned at their peripheries, through which they may be rivetted on the interior of the rim. When the rim is of cast iron, the plates may be secured without a flanch, one being cast within the rim, on either side, against which the plates may fit, rivets or bolts passing through them and through the flanch, to secure them in their places. Other modes of fixing the plates in their places may be devised, and I do not mean to confine myself to any specific plan of effecting this object, the manner of doing so not in any way affecting the principle upon which my improvement is founded. This mode of construction is particularly adapted to wheels for locomotive engines, that run either on common roads or on railways.

What I claim as my invention in my first described improvement, is the making the wheel of a railway carriage conical on its outer edge, and cylindrical between said conical part and the flanch, for the purpose of adapting it to run upon curved roads, and applying it thereto upon the principle, and in the manner herein before set forth.

What I claim as my invention in my second described improvement, is the substituting of metallic plates (generally of wrought iron,) for the spokes usually employed; and the giving to such plates a form which shall be convex, either curved or conical, from the rim to the hub of the wheel.

JOHN ELGAR.

IMPORTANT DISCOVERY.—We are informed by two gentlemen who lately passed through Syracuse, N. Y., that Mr. Avery, the proprietor of an extensive iron foundry in that place, has made a very important discovery in relation to casting of iron. The best kind of earth used in foundries is brought we believe from Canada. Mr. Avery analyzed this earth, and found it to contain a certain portion of blue clay. Following this up by a series of experiments, he discovered that if *common fine sand* was mixed with *common blue clay*, in the proportion of one tenth part of clay to nine tenths of sand, it would constitute the best possible composition for casting that he had ever used. Even the most delicate castings came out perfectly free of sand, and required no sort of cleaning by vitriol. He dismissed ten of his cleaners on the spot. Mr. Avery has taken out a patent for his discovery, and estimates that his composition will make an immense saving in the expense of iron foundries—in the diminution of labor, the cheapness of the sand, and in the disuse of vitriol in the process of cleansing. We hope that our neighbors of the furnace will immediately test it by experiment.—[Brattleboro' Independent Inq.]

THE BANKS OF NEWFOUNDLAND.—These banks extend over a space of forty thousand miles, and are from thirty to forty-five fathoms below the surface of the ocean. The shoals are inhabited by innumerable tribes of muscles and clams, to which it is a favorite residence, as they can easily bury their shells in the soft sand. They have enemies to contend with. The cod fish resort to this coast to prey on them. They keep a constant watch, and swim about a foot above the sub-marine sands; when a muscle opens its shell, it is immediately seized and devoured. At other times the fish do not wait; they are provided with a horny protuberance round their mouths; with these they burrow in the sand, and capture the muscle in its shell. The fishermen of various nations, French, English, and Americans, who resort to these banks, take annually from eight to ten millions of fish; on opening them they find the remains of twenty or fifty muscles in each; sometimes the muscle shells are found either wholly or partially dissolved. The first care of the fishermen, after taking their sta-

tions, is to ascertain the depth of water; the lines must be regulated so as to lie on the bottom, where the fish are always engaged in this species of sub-marine war

FEMALE SUPREMACY.—By all external symptoms, says an amusing writer in this month's Metropolitan, we may apprehend that the reign of women is fast approaching: look at the present aspect of Europe; a Queen of Spain, a Queen of Portugal, a prospective Queen of England. So that we are, at last, to be duly brought under "petticoat government." There is, too, Mrs. Norton conducting a magazine, and Mrs. Cornwall Wilson a weekly publication. Have not women invaded literature and art in all its branches—nay, the most awful arcana of science? There is Mrs. Somerville teaching us the mechanism of the heavens; while Miss Harriet Martineau gives us lessons on political economy.—[London paper.]

SALT.—The people of Onondaga County, N. Y., believe that they have under them an inexhaustible mass of rock salt, and that in raising this, instead of brine, they shall save half the expense of manufacturing, and be able to supply the Atlantic towns with salt cheaper than they can import it. There is one difficulty which now threatens, and that is the expense of fuel. The wood now used at the different salt springs now in operation amounts to 400 cords a day, and as the works are in use 200 days in a year, the annual consumption is 80,000 cords.

PRODUCTS AND PROFITS OF A FARM.—Full debit and credit accounts of farming operations afford one of the best sources of practical information. The following is from the Farmer's Register:

Sir—At the solicitation of a friend I am induced to give a statement of the products of my farm for the year 1833, and of its general arrangement. In doing this, as my grain is not yet all thrashed and taken to market, I cannot now arrive at perfect accuracy; but from what is, thrashed and sold, I can make a correct estimate of the quantity, and I have ascertained the price for such as has not been actually sold. My farm is situated on an extensive plain, that was once covered pretty generally with small pine timber. The soil is sand, occasionally gravel, and more or less mixed with loam. It consists of two hundred acres, of which thirty acres are in wood, twenty in meadow, and ten acres of waste, leaving for cultivation about one hundred and forty acres of arable, or land used for the plough, which is divided into seven lots, of twenty acres each. One of these lots is planted in corn, on clover sed. The corn is the large twelve rowed early yellow, and my usual produce is about fifty bushels per acre. My mode of cultivation is, that after the lot has lain one year in clover, to plough it the last of April or first of May, about six inches deep; then furrow both ways with a light corn plough; the first time across the furrows about two feet nine inches apart, the next about three feet. I plant immediately after furrowing. As soon as the corn is up the length of the finger, I harrow it with a large heavy harrow lengthwise with the furrow, as the ground was originally ploughed, and take two rows at a time. Two men or boys follow the harrow with aprons, out of which they plaster the corn, and also raise any plants which may have been thrown down by the harrow passing over them. In a week after I plough once between the rows as they are planted the narrowest way; the men follow with the hoe, and they will finish twenty acres in ten days. In about a fortnight more, I plough it the widest way of planting, twice between the rows, and throw the ground towards the plant. I cut the stalk above the ear as soon as the kernel in the ear is hard, and secure the stalks in shocks. We husk the corn on the hill, and two men will gather

one hundred bushels of ears in a day. The lot which was in corn, I put down the succeeding year to oats, and it commonly produces about forty bushels per acre. This lot I seed down with western clover seed, eight quarts per acre. Two lots are in wheat which were likewise the year previous in clover seed. The one is ploughed the first of August, and again just previous to sowing in September; the other but once the last of August or first of September, about a fortnight previous to sowing. These lots have the benefit of my barn manure, which is scattered on such portions as I think require it most.

I commonly sow about one bushel twelve quarts per acre, and my common yield is twenty bushels of wheat per acre. Thus four lots are employed, one in corn, one in oats, two in wheat; the remaining three are in pasture. Two of these are again to be ploughed up in the fall for wheat, and the remaining one is for corn the succeeding season. The experience of twenty years has confirmed me in the belief that this is the most successful mode of cultivation in our soil, and I have at all events been satisfied with the amount of produce my farm has yielded me. I annex a statement showing the amount of produce and the proceeds therefrom of my farm, for the year 1833, and the expenses of its management.

Cr.	
20 acres meadow, 2 tons hay per acre, sold a \$7½ per ton,.....	\$300 00
20 acres producing 1,000 bushels corn, for which I am offered 62½ cts. per bushel,.....	625 00
40 acres producing 800 bushels wheat, sold a \$1½,.....	850 00
20 acres producing 800 bushels oats, sold a 37½,.....	300 00
500 bushels potatoes a 2½,.....	125 00
3000 weight of pork, a \$5 50,.....	165 00
Sold one beef,.....	25 00
500 lbs. butter, a 16 cts.,.....	80 00
225 lbs. wool, a 4½,.....	112 00
55 lambs, increase of my flock,.....	80 00
	\$2,662 00

The item of pasturage not put down.

Dr.	
To hiring one man per year,.....	\$100 00
To do. do. seven months,.....	70 00
To hiring 15 days in haying and harvest,.....	13 12
3½ tons plaster a \$7 50,.....	26 25
3½ bushels clover seed a \$7 50,.....	26 25
Taxes,.....	15 00
Mechanics' bills,.....	50 00
	320 63

Income,.....	\$2,341 38
The farm sold a \$60, for 200 acres, ..	\$12,000
Stock and implements valued at	1,000
	\$13,000
Interest on this sum at 7 per ct.,.....	910 00
Gain,.....	\$1,431 83

Making the entire interest upon \$13,000, after deducting expenses, about 18 per cent. There are other profits from the farm not enumerated in the within statements, such as house-rent, garden, orcharding, raising of poultry, &c. I will put them against any little incidental expenses not enumerated, but which they will be amply sufficient to defray. The labor upon my farm is performed by two men as above stated, but under my own direction, and all our operations tend to lessen the amount of labor as much as practicable; and I find that nothing conduces more to this result than to keep ahead of my work through the season. For myself, I labor but moderately, but keep up a constant supervision. I will only farther add, that since I have adopted the principle of total abstinence from ardent spirits, at all seasons of the year, I think I have not only gained vastly in the amount of work done by my men, but my farming business has gone on more cheerfully.

Yours, respectfully,

TEUNIS HARDER.

Kinderhook, Columbia Co. Jan. 14, 1834.

In consequence of the resignation of the Postmaster at Kittery, Maine, and no candidate being recommended to succeed him, the Postmaster General has discontinued that office.—[Eastern Argus.]

Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

(Continued from page 215.)

There is another curious circumstance in the form of the thigh bone, showing how it is calculated for strength as well as freedom of motion. To understand it we must first look to the *dishing* of a wheel. The dishing is the oblique position of the spokes from the nave to the felly, giving the wheel a slightly conical form. When a cart is in the middle of a road, the load bears equally upon both wheels, and both wheels stand with their spokes oblique to the line of gravitation.

If the cart is moving on the side of a barrel shaped road, or if one wheel falls into a

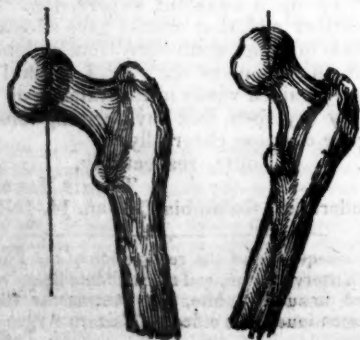
Fig. 17.



rut, the whole weight comes upon one wheel; but the spokes of that wheel, which were oblique to the load, when it supported only one-half of the weight, are now perpendicular under the pressure, and are capable of sustaining the whole. If roads were made perfectly level, and had no holes in them, the wheels of carts might be made without dishing; but if a cart is calculated for a country road, let the wheelwright consider what equivalent he has to give for that very pretty result proceeding from the obliquity of the spokes, or *dishing* of the wheel.

When we return to consider the human thigh bone, we see that the same principle holds; that is to say, that whilst a man stands on both his legs, the necks of the thigh bones are oblique to the line of gravitation of the body; but when one foot is raised, the whole body then being balanced on one foot, a change takes place in the position of the thigh bone, and the obliquity of that bone is diminished; or, in other words, now that it has the whole weight to sustain, it is perpendicular under it, and has therefore acquired greater strength.

[Fig. 18.]



CHAPTER V.

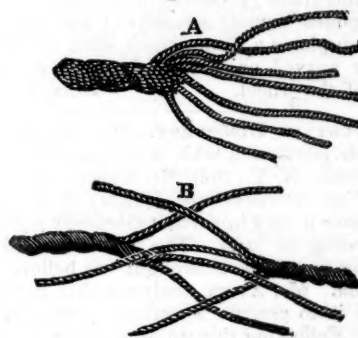
OF THE TENDONS COMPARED WITH CORDAGE.

AGE.—Where nature has provided a perfect system of columns, and levers, and pulleys, we may anticipate that the cords by which the force of the muscles is concentrated on the moveable bones, must be constructed with as curious a provision for their offices. In this surmise we shall not be disappointed. To understand what is necessary to the strength of a rope or cable, we must learn what has been the object of the improvements and patents in this manufacture. The first process in rope making is hatchelling the hemp; that is, combing out the short fibres, and placing the long ones parallel to one another. The second is spinning the hemp into yarns. And here the principle must be attended to, which goes through the whole process in forming a cable; which is that the fibres of the hemp shall bear an equal strain; and the difficulty may be easily conceived, since the twisting must derange the parallel position of the fibres. Each fibre, as it is twisted, ties the other fibres together, so as to form a continued line, and it bears at the same time a certain portion of the strain, and so each fibre alternately. The third step of the process is making the yarns. Warping the yarns is stretching them to a certain length; and, for the same reason that so much attention has been paid to the arrangement of the fibres for the yarns, the same care is taken in the management of the yarns for the strands. The fourth step of the process is to form the strands into ropes. The difficulty of the art has been to make them bear alike, especially in great cables, and this has been the object of patent machinery. The *hardening* by twisting is also an essential part of the process of rope-making; for without this it would be little better than extended parallel fibres of hemp. In this twisting, first of the yarns and then of the strands, those which are on the outer surface must be more stretched than those near the centre; consequently, when there is a strain upon the rope the outer fibres will break first, and the others in succession. It is to avoid this that each yarn and each strand, as it is twisted or hardened, shall be itself revolving, so that when drawn into the cable the whole component parts may, as nearly as possible, resist the strain in an equal degree; but the process is not perfect, and this we must conclude from observing how different the construction of a tendon is from that of a rope. A tendon consists of a strong cord apparently fibrous, but which, by the art of the anatomist, may be separated into lesser cords, and these by maceration, can be shown to consist of cellular membrane, the common tissue that gives firmness to all the textures of the animal body. The peculiarity here results merely from its remarkable condensation. But the cords of which the larger tendon consists do not lie parallel to each other, nor are they simply twisted like the strands of a rope; they are, on the contrary, plaited or interwoven together.

If the strong tendon of the heel, or Achilles tendon, be taken as an example, on first inspection it appears to consist of parallel fibres, but by maceration these fibres are found to be a web of twisted cellular texture. If you take your handkerchief, and, slightly twisting it, draw it out like a rope, it will seem to consist of parallel cords; such is, in fact, so far the structure of a ten-

don. But, as we have stated, there is something more admirable than this, for the tendon consists of subdivisions, which are like the strands of a rope; but instead of being twisted simply as by the process of hardening, they are plaited or interwoven in a way that could not be imitated in cordage by the turning of a wheel. Here then is the difference: by the twisting of a rope the strands cannot resist the strain equally, whilst we see that this is provided for in the tendon by the regular interweaving of the yarn, if we may so express it, so that every fibre deviates from the parallel line in the same degree, and consequently receives the same strain when the tendon is pulled. If we seek for examples illustrative of this structure of the tendons, we must turn to the subject of ship rigging, and see there how the seaman contrives, by undoing the strands and yarns of a rope, and twisting them anew, to make his splicing stronger than the original cordage. A sailor opens the ends of two ropes thus:*

Fig. 19.



and places the strands of one opposite and between the strand of another, and so interlaces them. And this explains why a hawser-rope, a sort of small cable, is spun of three strands; for as they are necessary for many operations in the rigging of a ship, they must be formed in a way that admits of being cut and spliced; for the separation of three strands, at least, is necessary for knotting, splicing, whipping, mailing, &c. which are a few of the many curious contrivances for joining the ends of ropes, and for strengthening them by filling up the interstices to preserve them from being cut or frayed. As these methods of splicing and plaiting in the subdivisions of the rope make an intertexture stronger than the original rope, it is an additional demonstration, if any were wanted, to show the perfection of the cordage of an animal machine, since the tendons are so interwoven; and until the yarns of one strand be separated and interwoven with the yarns of another strand, and this done with regular exchange, the most approved patent ropes must be inferior to the corresponding part of the animal machinery.

A piece of cord of a new patent has been shown to us, which is said to be many times stronger than any other cord of the same diameter. It is so far upon the principle here stated, that the strands are plaited instead of being twisted; but the tendon has still its superiority, for the lesser yarns of each strand in it are interwoven with those of other strands. It however gratifies us to see, that the principle we draw from the animal body is here confirmed. It may be

* A strands and yarns opened. B, ends opened and laid for splicing, in a manner exactly like the interlacing of the tendon.

asked, do not the tendons of the human body sometimes break? They do; but in circumstances which only add to the interest of the subject. By the exercise of the tendons, (and their exercise is the act of being pulled upon by the muscles, or having a strain made on them,) they become firmer and stronger; but in the failure of muscular activity, they become less capable of resisting the tug made upon them, and if, after a long confinement, a man has some powerful excitement to muscular exertion, then the tendon breaks. An old gentleman, whose habits have been long staid and sedentary, and who is very guarded in his walk, is upon an annual festival tempted to join the young people in a dance; then he breaks his tendo Achillis. Or a sick person, long confined to bed, is, on rising, subject to a rupture or hernia, because the tendinous expansions guarding against protrusion of the internal parts, have become weak from disease.

Such circumstances remind us that we are speaking of a living body, and that, in estimating the properties of the machinery, we ought not to forget the influence of life, and that the natural exercise of the parts, whether they be active or passive, is the stimulus to the circulation through them, and to their growth and perfection.

CHAPTER VI.

OF THE MUSCLES—OF MUSCULARITY AND ELASTICITY.—There are two powers of contraction in the animal frame—elasticity, which is common to living and dead matter, and the muscular power, which is a property of the living fibre.

The muscles are the only organs which properly have the power of contraction, for elasticity is never exerted but in consequence of some other power bending or stretching the elastic body. In the muscles, on the contrary, motion originates; there being no connection, on mechanical principles, betwixt the exciting cause and the power brought into action.

The real power is in the muscles, while the safeguard against the excess of that power is in the elasticity of the parts. This is obvious in the limbs and general texture of the frame; but it is most perfectly exhibited in the organs of circulation. If the action of the heart impelled the blood against parts of solid texture, they would quickly yield. When by accident this does take place, even the solid bone is very soon destroyed, but the coats of the artery which receive the rush of blood from the heart, although thin, are limber and elastic; and by this elasticity or yielding, they take off or subdue the shock of the heart's action, while no force is lost: for as the elastic artery has yielded to the sudden impulse of the heart, it contracts by elasticity in the interval of the heart's pulsation, and the blood continues to be propelled onward in the course of the circulation, without interval, though regularly accelerated by the pulse of the heart.

If a steam engine were used to force water along the water-pipes, without the intervention of some elastic body, the water would not flow continuously, but in jerks, and therefore a reservoir is constructed containing air, into which the water is forced against the elasticity of the air. Thus, each stroke of the piston is not perceptibly communicated to the conduit pipe, because the intervals are supplied by the push of the compressed air. The office of the reservoir

containing air is performed in the animal body by the elasticity of the coats of the arteries, by which means the blood which flows interruptedly into the arteries has a continuous and uninterrupted flow in the veins beyond them.

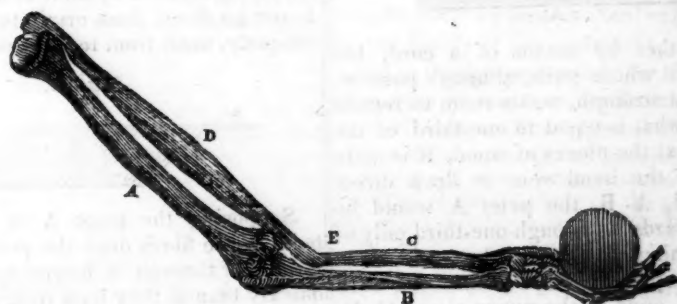
A muscle is fibrous, that is, it consists of minute threads bundled together, the extremities of which are connected with the tendons which have been described. Innumerable fibres are thus joined together to form one muscle, and every muscle is a distinct organ. Of these distinct muscles for the motions of the body there are not less than four hundred and thirty-six in the human frame, independent of those which perform the internal vital motions. The contractile power which is in the living muscular fibre, presents appearances which, though familiar, are really the most surprising of all the properties of life. Many attempts have been made to explain this property, sometimes by chemical experiment, sometimes on mechanical principles, but always in a manner repugnant to common sense. We must be satisfied with saying that it is an endowment, the cause of which it would be as vain to investigate as to resume the search into the cause of gravitation.

The ignorance of the cause of muscular contraction does not prevent us from studying the laws which regulate it, and under this head are included subjects of the highest interest, which, however, we must leave, to pursue the mechanical arrangement of the muscles.

Since we have seen that there are four hundred and thirty-six distinct muscles in the body, it is due to our readers to explain how they are associated to effect that combination which is necessary to the motion of the limbs, and to our perfect enjoyment. In the first place, the million of fibres which constitute a single muscle are connected by a tissue of nerves, which produce a unison or sympathy amongst them, so that one impulse causes a simultaneous effort of all the fibres attached to the same tendon. When we have understood that the muscles are distinct organs of motion, we perceive that they must be classed and associated, in order that many shall combine in one act; and that others, their opponents, shall be put in a state to relax and offer no opposition to those which are active. These relations can only be established through nerves, which are the organs of communication with the brain, or sensorium. The nerves convey the will to the muscles, and at the same time they class and arrange them to as to make them consent to the motions of the body and limbs.

On first looking to the manner in which the muscles are fixed into the bones, and the course of their tendons, we observe everywhere the appearance of a sacrifice of mechanical power, the tendon being inserted into the bone in such a manner as to lose the advantage of the lever. This appears to be an imperfection, until we learn that there is an accumulation of vital power in the muscle in order to attain velocity of movement in the member.

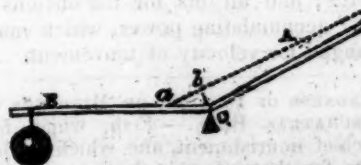
Fig. 20.



The muscle, D, which bends the fore-arm, is inserted into the radius, E, so near the fulcrum, or centre of motion, in the elbow joint, and so oblique, that it must raise the hand and fore-arm with disadvantage. But, correctly speaking, the power of the muscle is not sacrificed, since it gains more than an equivalent in the rapid and lively motions of the hand and fingers, and since these rapid motions are necessary to us in a thousand familiar actions; and to attain this the Creator has given sufficient vital power to the muscles to admit of the sacrifice of the mechanical or lever power, and so to provide for every degree and variety of motion which may answer to the capacities of the mind.

If we represent the bones and muscles of the fore-arm by this diagram, we shall see

Fig. 21.



tendon to the lever into which it is inserted. It represents the lever of the third kind, where the moving power operates on a point nearer the fulcrum than the weight to be moved.

Here A represents the muscle, B the lever, and C the fulcrum. The power of the muscle is not represented by the distance of its insertion, *a*, from the fulcrum C. The line which truly represents the lever must pass from the centre of motion perpendicularly to the line of the tendon, namely C *b*. Here again, by the direction of the tendon, as well as by its actual attachment to the bone, power is lost and velocity gained.

We may compare the muscular power to the weight which impels a machine. In studying machinery it is manifest that weight and velocity are equivalent. The handle of the winch in a crane is a lever, and the space through which it moves, in comparison with the slow motion of the weight, is the measure of its power. If the weight raised by the crank be permitted to go down, the wheels revolve, and the handle moves with the velocity of a cannon ball, and will be as destructive if it hit the workman. The weight here is the power, but it operates

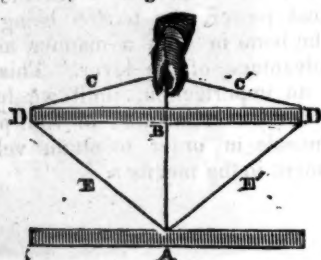
that power is lost by the inclination of the

with so much disadvantage that the hand upon the handle of the winch can stop it: but give it way, let the accelerated motion take place, and the hand would be shattered which touched it. Just so the fly wheel, moving at first slowly, and an impediment to the working of a machine, at length acquires momentum so as to concentrate the power of the machine, and enable it to cut bars of iron with a stroke.

The principle holds in the animal machinery. The elbow is bent with a certain loss of mechanical power; but by that very means, when the loss is supplied by the living muscular powers, the hand descends through a greater space, moves quicker, with a velocity which enables us to strike or to cut. Without this acquired velocity, we could not drive a nail; the mere muscular power would be insufficient for many actions quite necessary to our existence.

Let us take some examples to show what objects are attained through the oblique direction of the fibres of the muscles, and we shall see that here, as well as by the mode of attachment of the entire muscle, velocity is attained by the sacrifice of power. Suppose that these two pieces of wood, to be

Fig. 22.



drawn together by means of a cord, but that the hand which pulls, although possessing abundant strength, wants room to recede more than what is equal to one-third of the space betwixt the pieces of wood, it is quite clear that if the hand were to draw direct on the cord, A B, the point A would be brought towards B, through one-third only of the intervening space, and the end would not be accomplished. But if the cord were put over the ends of the upper piece, C, D, E, and consequently directed obliquely to their attachment at A, on drawing the hand back a very little, but with more force, the lower piece of wood would be suddenly drawn up to the higher piece, and the object attained. Or we may put it in this form: If a muscle be in the direction of its tendon, the motion of the extremity of the tendon will be the same with that of the muscle itself; but if the attachment of the muscle to the tendon be oblique, it will draw the tendon through a greater space; and if the direction of the muscle deviate so far from the line of the tendon as to be perpendicular to it, it will then be in a condition to draw the tendon through the greatest space with the least contraction of its own length.

Fig. 23.

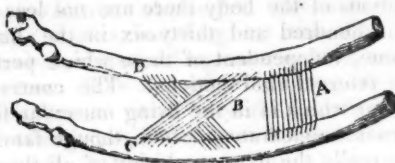


Thus, if A B be a tendon, and C D a muscle, by the contraction of C to D the extremities of the tendon A B will be brought

together through a space double the contraction of the muscle. It is the adjustment on the same principle which gives the arrow so quick an impulse from the spring of the bow, the extremities of the bow drawing obliquely on the string.

To free breathing, it is necessary that the ribs shall approach each other, and this is performed by certain *intercostal* muscles, (or muscles playing between the ribs,) and now we can answer the question, why are the fibres of these muscles oblique?

Fig. 24.



Let us suppose this figure to represent two ribs with thin intervening muscles. If the fibres of the muscle were in the direction A, across, and perpendicular to the ribs; and if they were to contract one third of their length, they would not close the intervening space; they would not accomplish the purpose. But being oblique, as at B, although they contract no more than one third of their length, they will bring the ribs C D together. By this obliquity of the intercostal muscles they are enabled to expand the chest, in inspiration, in a manner which could not be otherwise accomplished.

In the greater number of muscles the same principle directs the arrangement of the fibres; they exchange power for velocity of movement, by their obliquity. They do not go direct from origin to insertion, but obliquely, thus, from tendon to tendon:

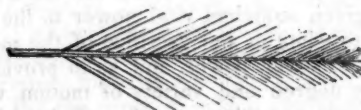
Fig. 25.



Supposing the point A to be the fixed point, these fibres draw the point B with less force, but through a larger space, or more quickly than if they took their course in direct lines; and by this arrangement of the fibres the freedom and extent of motion in our limbs are secured.

But the muscles must be strengthened by additional courses of fibres, because they are oblique; since by their obliquity they lose something of their force, and therefore it is, we must presume that we find them in a double row, making what is termed the *penniform* muscle, thus—

Fig. 26.



and sometimes the texture of the muscle is still further compounded by the intermixture of tendons, which permit additional series of fibres; and all this for the obvious purpose of accumulating power, which may be exchanged for velocity of movement.

BLINDNESS OF PASSION, OR MISTAKES OF A KANTSCHATKAN BEAR.—Fish, which forms their chief nourishment, and which the bears procure for themselves in the rivers, was last year excessively scarce in Kamtschatka. A

great famine consequently existed among them, and, instead of retiring to their dens, they wandered about the whole winter through, even in the streets of the town of St. Peter and St. Paul. One of them finding the outer gate of a house open, entered, and the gate accidentally closed after him. The woman of the house had just placed a large tea-machine, full of boiling water, in the court: the bear smelt to it and burned his nose; provoked at the pain, he vented all his fury upon the kettle, folded his fore-paws round it, pressed it with his whole strength against his breast to crush it, and burned himself, of course, still more and more. The horrible growl which rage and pain forced from him brought all the inhabitants of the house and neighborhood to the spot, and poor bruin was soon dispatched by shots from the window. He has, however, immortalized his memory, and become a proverb amongst the town's-people, for, when any one injures himself by his own violence, they call him "the bear with the tea-kettle."—[Capt. Kotzebue's *New Voyages round the World in the Years 1823-1826.*]

AGRICULTURE, &c.

WATER FOR GREEN-HOUSE PLANTS.

Soft pond water, such as is supplied from the watering or floating of meadows, holds in solution, and in its most limpid state, all the food which most plants require; and it is only such food as they are capable of taking up by their spongioles, or digesting by their system. Such water is not attainable by every person; but I think that a good substitute might be artificially procured by placing some turfs from a common or sheep-walk, into a large wicker-basket; and, after nearly filling the basket with them, to place *two turfs manured with a thin layer between them of poultry or sheep dung*, at the top of the basket. The best and softest water that can be had should then be poured over the turfs till it filtrates, in a clear state, into a recipient vessel placed underneath. A bushel-basket would last, for this purpose, many weeks, and suffice for the saturation of some hundreds of gallons of water with nutritious matter, and also for the detention of other particles which could not be assimilated by the organs of the plants.—[Mr. Mearns, gardener to the Duke of Portland.]

ENCLOSURES.—Most of the modern nations of Europe still enclose their lands in the ancient method. Property is so much subdivided in France by the extinction of the law of primogeniture, that no *field* enclosures are to be observed in that country,—a few march-stones, a row of trees, or particular single trees here and there, marking the boundaries of estates. Throughout Germany, Bohemia, Switzerland, Spain, and Italy, enclosures are only found near farm-houses and villages, the bulk of the corn being raised on extensive unenclosed grounds. On the other hand, the land in Holland and Belgium is in general very much enclosed, so much so, that the fields appeared half choked with hedge-row trees and hedges. The same remark very nearly applies to the south of England, where much valuable ground is occupied with, certainly beautifully luxuriant, but sadly neglected hedges. The land in Ireland is also too much subdivided, and mostly with turf walls, which are generally very unfit to detain live stock. It is in the north of England, and the best cultivated districts in Scotland, that enclosures, suited to the improved state of the husbandry of the kingdom, are to be found. There, not only whole farms are enclosed, but the size of the enclosures conforms to

that system of husbandry which is suited to the nature of the soil. There, the growing crops of all kinds receive shelter from the vicissitudes of the weather, and protection from the depredations of live stock; and the live stock themselves enjoy, as a recompense for their confinement within the enclosures, peace and plenty unmolested.

A fence occupying elevated ground bestows more shelter to fields than in other situations; and on this account, if any other circumstances will permit it, the elevated summits of rising ground ought always to be chosen as the sites of fences. Such sites place a thorn-hedge beyond the crushing power of a heavy fall of snow. But it generally happens that the lower ends of fields cannot be enclosed in a straight line,—a rivulet or hollow between two rising grounds frequently terminating their lower ends. In that case, the fence ought to follow the course of the water or hollow ground, in order to provide an egress for the surface-water coming from both sides of the rising ground. A serpentine fence in a hollow, contrary to one on a rising ground, affords more shelter than a straight one, in the direction of the wind, which almost always takes the direction of the valley. A public road or canal passing through a property, or an old plantation growing in the middle of the land, affects the shaping out of enclosures. Whether any of them exists before or after the land is enclosed, the irregular sides of the enclosures, which alone should contain wedge-shaped ridges, should be placed next the obstacle.

The advantages of enclosing land may thus be summed up. Enclosures shelter corn against the inclemency of the weather, and they prevent the trespasses of men and animals. They not only afford the most excellent shelter to live stock, but they insure them peace and protection while feeding, or when at rest. They enhance the value of land in every situation; and they greatly beautify the appearance of a country. They confer ease of mind to the farmer by securing his crops, and flocks, and herds, from danger; and they impart confidence to the country gentleman, that the enclosing of his estate of land and wood will continually improve his means, so long as he continues to protect it by maintaining the fences in an efficacious manner.

ON THE CULTURE OF THE GARDEN BEAN.—I have been very successful for half a dozen years in obtaining two crops of beans from the plants. In the summer of 1826, my first crop of magazin and early long pod beans was by a very strong and violent wind blown down; this was done when the beans were in full blossom. The crop from the blossoms which the plants then possessed was very fine and abundant, and gathered during July. In three weeks after, the beans were prostrated, each stem pushed forth from near the root one or more, in some instances four to six, fresh stems; these bloomed freely, and produced an abundant crop, which were gathered during September. Since that grew, I have uniformly bent down, so as to break the stalk near the root, my first and second crops of beans; I have by this means obtained four crops of beans from two sowings, and which supplied me from July 1st to 31st October. By this method only half the seed was required which I had been accustomed to use, and the greatest advantage to me was, that only half the ground was required, so that my

advantages by this method are four-fold. I always pinch out the tops when the plants are in full bloom; this throws the vigor into the production of fruit instead of a continued increase of stem and foliage.—[Cobbett.]

RECEIPT FOR DRESSING SALLAD.

BY THE REV. SIDNEY SMITH.

Two large potatoes, pressed through kitchen sieve, Smoothness and softness to the sallad give, Of mordent mustard add a single spoon, (Distrust the condiment that bites too soon;) But deem it not, thou man of herbs, a fault, To add a double quantity of salt, Four times the spoon with oil of Lucca crown, And twice with vinegar procured from town; True flavor needs it, and your poet begs, The pounded yellow of two well boiled eggs; Let onions' atoms lurk within the bowl, And, scarce suspected, animate the whole And lastly, in the flavored compound toss A magic spoonful of anchovy sauce. O! great and glorious,—O! herbaceous treat,— 'Twould tempt the dying anchorite to eat; Back to the world he'd turn his weary soul, And plunge his fingers in the sallad bowl.

BEST TIMES FOR REMOVING LAURELS, &c.—

Evergreens, if taken up carefully, may be planted with success at all seasons. About eight years ago, I superintended the planting of some very large ones, consisting of Portugal, and Common Laurels, Cedars, &c., in the month of July, when the weather was very dry, at Sulby Hall, Northamptonshire, the seat of Geo. Payne, Esq., which did remarkably well. If, however, the situation be dry, and the soil light and sandy, they will in general, with the exception of hollies, do best, if planted in November or December, providing the weather be mild. On the other hand, if the soil be low and retentive of moisture, they thrive best if planted in May. In both cases, it is indispensably necessary that all large plants be taken up with large balls, the roots being as little damaged as possible. S. H.—[Hort. Register.]

SUBSTITUTE FOR HOPS.—I was highly delighted in finding so much in the Register calculated to interest ladies. My wife remarked the other day, that she had got fully the worth of the subscription already. I trust you will, in every number, have an eye to that; and as I have lately become acquainted with a fact which may be convenient to them at some period, I will briefly mention it on this occasion, and if it be indeed new to you, (as it is to me,) you can use it for the interest and instruction of the ladies, if you see cause. It is the substituting the Life Everlasting (the botanical name I do not know,) for hops, in making yeast.

The yeast is made of the dried leaves and flowers just as yeast is made of the hop, and used in the same way. I am informed by those who have used it for some time, that bread is not as apt to become sour, and the flavor is finer than the hop bread. I have no doubt its qualities would be greatly improved if it were cultivated, and the leaves and flowers gathered as soon as they were ripe, and dried in the shade.—[Farmers' Register.]

FOSSIL MANURE IN NORTH CAROLINA.—It is enough to make the heart of the patriot bleed, when he reflects what North Carolina is, and what she is capable of being. With every thing in the way of resources, physical and moral, to make her a great, commanding and prosperous state—she is at best but stationary, and which you know is comparative declension. Her population and wealth are deserting her in one continued and augmenting stream, for other climes. And why? Simply because she will not improve the means which the God of Nature has placed at her disposal. Internal improvement is at present a more urgent want with us, than the improvement of our soils. Millions of our resources are lying dormant, for the want of facilities for transportation. Let me offer a single illustration, applicable exclusively to the eastern section of the state. The pine-trees, (long leaf,) of North Carolina, for lumber and naval stores, are unquestionably of greater value

than her slaves, if they could be made available. I have been informed upon the best authority, that 20 per cent. can be cleared on the capital embarked in making turpentine, when convenient to market. But for the want of this convenience, this immense resource can only be called into action on small portions of our navigable streams. I travelled a few days ago from Waynesborough to Fayetteville, a distance of sixty-five miles, through a country heavily timbered with the finest long leaf pines, and saw no evidence during the route of their being used for any thing but plantation purposes. I should except one tar kiln and half a dozen trees designed for tar timber, partly hewn and left to decay—but not one stroke of the axe for turpentine. Hundreds and thousands of acres are in the state that nature formed them. This is but "*a pluribus unum*," to show how profoundly the giant sleeps. But I am trespassing to much of your patience, and will force myself to a conclusion. Yours, &c. ISAAC CROOM.—[Farmers' Register.]

STAINS BY FRUITS are readily removed from clothes by wetting them, and placing them near lighted brimstone; a few matches will answer the purpose.

ARABIAN HORSE.—Perhaps the most remarkable point about the Arabian horse is the extraordinary smallness of the head and mouth,—so small, indeed, is the latter that you would think they might use a common tumbler for a water bucket.

INCREASE OF MANURE BY ROTTING.—It is, we believe, a very general impression that even dry vegetable substances undergo a great loss in rotting, and hence one of the strong and oft repeated arguments of the advocates of long unfermented manures, that 50 per cent. in weight is lost by fermentation, and 50 per cent. in the quality of the remainder. We recommend to their consideration the following extract from an article on the Rotation of Crops, by J. H. Couper, Esq. of South Carolina.

A sufficient amount of manure is yielded to keep the soil in the most productive state, if a stock of animals be kept on the plantation and the dry vegetable matter of the fields be carefully carted to the pens. The expressed cane, tops and leaves, from an acre of cane, yield about 10,000 lbs. of dry vegetable matter. An acre of corn, including blades, stalks, shucks and cobs, about 2500 lbs., when the yield of corn has been 20 bushels;* and the after crop of peas 1000 lbs., together 4500 lbs. An acre of solid peas 2000 lbs. The potatoe vines, pumpkins and turnips, being eat green, contribute only to the production of fluid manure. The total quantity of dry vegetable matter to be applied to the manuring of 16 acres in crop, will therefore be,

4 acres in corn, at 4500 lbs. per acre,	18,000 lbs.
1 " peas and turnips,	2,000
3 " cane, at 10,000 lbs.	30,000
	50,000

which, if merely rotted by rain, will yield 100,000 lbs. of manure; and if rotted by the urine and dung of stock, from 150,000 lbs. to 200,000 lbs.,† or at least 25,000 lbs. of manure to each of the 4 acres proposed to be manured. To this supply of manure must be added from 50 to 70 bushels of cotton-seed from seven acres of cotton to be applied to the four acres of corn; and the peas that are ploughed in, preparatory to the potato crop of vines.

* Mr. Madison estimates the corn-stalk, with its appurtenant offal, at not less than three times the weight of the grain belonging to it.—[Address, Amer. Far. Vol. i. p. 171. See Idem. Vol. iv. p. 404, for Dr. Bellenger's estimate.]

† Three hundred stone of dry wheat straw increased by absorption to 719 stone in seven months. Straw, if simply rotted by moisture from the heavens, will double its original weight; but when rotted by the urine and turnip-fed stock, every ton will yield four tons of manure.—[Sinclair's Code of Agr. ch. iii. sec. 4. 5.]

Plan of an Apiary or Bee-house, by means of which the honey and wax can be taken without destroying the Bees. By G. [From the Quarterly Journal of Agriculture, &c.]

First.—Erect a building of wood, of dimensions according to the extent you may wish to avail yourself of the labor of bees. A frame building of 7 feet square, and 7 feet high to the eaves, will contain 90 hives of the dimensions after mentioned. The front should face the south or south-east. The sides of the house within should be shelved with stout plank, well supported by uprights and cross pieces, to hold the hives. The lower shelf may be about a foot from the floor, and the others about 14 inches apart. A tier of shelves is to be placed in the middle of the house, at the same distances from each other; this arrangement will leave two feet gangway between the shelves for the convenience of passing between the hives. There must of course be a door to each gangway, if the shelves are continued from the front to the rear of the house.

Secondly.—The hives must be made as near as may be of 12 inches square, and 12 inches high outside; it being found that a hive of these dimensions, well filled, is sufficient to support an ordinary swarm of bees through the winter. The hives should have a bottom board to fit close, but it need not be nailed fast; each hive must have two openings at bottom, exactly opposite each other, 3 inches wide, and $\frac{1}{2}$ inch high; these openings are furnished with shutters of tin or thin wood, moveable in a groove, in order to close them when the hives are to be removed. On the opposite side of each hive should be inserted a pane of glass, covered with a shutter, to enable you to see, on raising the shutter, that the hives are full. For the greater convenience of opening and shutting the apertures into the hives, they should be made of a slit of tin long enough to reach from the aperture, when closed, to the outside of the hive. In the front of the house there must be openings to correspond with the front hives within, and on the outside there should be placed a small shelf to each aperture for the bees to alight on.

You may begin to stock your house in the winter with old hives, placing a new hive of the above dimensions in front of the old one, and in the spring the bees, after filling up the old comb, will fall to work in the new hive. As soon as you perceive this, you may drive the bees from the old hive by striking on it, or by injecting the smoke of tobacco, and take it away; or take it away and set it down in front of the house, invert it and take off the bottom board—before night, the bees will have all left it and gone into the new hive. When the new hive is filled, close the apertures, draw it back and place another in front; open the communication, and they will in like manner fill this hive. You thus continue to supply hives till your shelves are full. In the fall you may take up as many as you find there are no bees in, leaving however sufficient honey to support the stock through the winter.

In order to derive the greatest possible advantage from their bees, some people take away in the spring all the old comb and honey that the bees have left unconsumed. But this should not be done until you are well assured that the bees can get their living from the early spring flowers. This can only be done, however, but by those persons

the bees will not sting, or by protecting the hands and face from their attacks.

G.

HORSES AND OXEN.—The following comparison between the expense of a yoke of oxen and a horse at a marketable age is given in the Report of the Trustees of the Kennebec (Maine) Agricultural Society, which we find in the Maine Farmer:

Raising a Horse.		A Yoke of Oxen.	
Use of Stud	\$4.00	Use of Bull	\$2.00
Use of Mare	20.00	Raising Calves	10.00
Keeping first winter	7.00	1st Wintering	12.00
Insurance	1.00	Insurance	50
At 1 year old		At 1 year old	
2d year—Summering	\$32.00	2d year—interest	\$24.50
Wintering	3.00	Summering	1.49
Interest	7.00	Wintering	4.00
Insurance	1.92	Tax	12.00
Tax	1.00	Insurance	33
	50		50
At 2 years old		At 2 years old	
3d year—Summering	\$45.00	3d year—Summering	\$42.82
Wintering	5.00	Wintering	7.00
Interest	11.00	Interest	12.00
Tax	2.71	Insurance	2.56
Tax	75		75
Insurance	1.50		
At 3 years old		At 3 years old	
4th year—Summering	\$66.38	Price of Oxen	\$65.13
Wintering	5.00	Price of Horse	50.00
Interest	15.00	Difference	\$20.00
Tax	13.98		
Tax	1.00		
Insurance	1.50		
Shoeing	1.50		
At 4 years old		Loss on the Horse	
Labor equal to breaking.	\$94.35	Gain in the Oxen	34.36
		Difference to raiser	14.87
			\$49.23

BOTS.—Much difference of opinion prevails among farmers, as to the cause of Bots, the manner in which they destroy horses, and the best method of protecting them against their attacks.

The Bots which cause the death of so many horses are hatched from the eggs of a Bee or Insect, which belongs to the Class Insecta, order diptera, genus cestrus. It is affirmed by entomologists that there are two species of the genus cestrus, which deposite their eggs upon horses, but which of the species it is that produces bots, or whether both of them do or not, they are not agreed.

The eggs which produce bots are deposited during the months of August and September, but how they are conveyed to the stomach is also unsettled.

This insect, like others of the same class, passes through different stages. Commencing with the egg, which hatches into a larvæ, which remains in the stomach through the winter, where it continues to increase in size, until the warm weather in the spring, when it passes off with the *feces*, and changes from its larvæ state to that of the perfect fly, or bee.

It is during the winter or fore part of the spring that these larvæ do the greatest injury to the internal coats of the horse's stomach.

From examination made on the stomachs of horses which have been destroyed by bots, it appears that the larvæ attach themselves to the stomach when small, by their antennæ, or horns, where they continue to increase in size as the season progresses, drawing their nourishment from the juices of the stomach. As the season approaches for their transmutation or transformation from the larvæ to the fly, they become stupid, and let go their hold upon the stomach and pass off with the remains of the animal's food, and from thence into the ground, from whence they emerge perfect insects.

When the number of these larvæ is not great, and the food and exercise of the horse are steady, they do not often affect him; but where the number is great, and the horse is fed irregularly during the last of winter they often prove fatal.

The season when horses are destroyed by bots, in this latitude, is from the middle of February to the middle of May. The remaining nine months in each year there is little danger to be apprehended from them.

Numerous experiments have been made, by immersing them in different substances, after

they have been taken from the stomachs of horses, in order to find something which would destroy them, by being given as a medicine, very few of which have ever given any encouragement of success.

During the time that this insect is in its larvæ state, it is covered with a thick, tough skin, which seems to protect it against the effect of any substance which can be introduced into the horse's stomach with safety.

As it is next to impossible to destroy bots in horses, the greatest safety is in making use of such preventives as are found beneficial.

The first step toward preventing bots undoubtedly is, to keep the horse's legs and sides as clear as possible from the nits or eggs of the insect, by scraping them daily with a sharp knife. By doing this the quantity is supposed to be materially diminished.

The next precaution is to keep horses moderately loose in their bodies, and not to make sudden alterations in their food, nor to treat them in any manner that would have a tendency to render them inclined to fever.

The articles most recommended to be mixed with their food are lime and ashes, either of which, if given in small quantities, during the three months when they are troublesome, are said to be efficacious. Salt is highly recommended by some, who suppose that, if a horse is salted once or twice each week, it will prevent his being troubled.

The manner in which bots operate, is by destroying so much of the inner coat of the stomach as to produce inflammation, or by collecting either at the upper or lower end of the stomach, and obstructing the common passage of the bowels; cathartics are to be recommended.

A late English writer on the diseases of horses says, "when bots fix themselves on the sensible portion of the stomach they may do no harm; but no medicine that we know of will destroy them." Another English writer on this subject says, that bots are generally attached to the insensible part of the stomach, and that while remaining there they produce health rather than injure it. Blaine, as well as most American writers, recommends common salt as one of the best preventives against inflammation from bots, and says it should be given daily.

Treating the disease by bots as an inflammatory complaint, undoubtedly is the course most beneficial, and will come under the same management as other inflammations of the bowels. The same causes that produce ordinary inflammations of the bowels are also liable to produce inflammation from bots, and these are—over-exertion, after which the horse is allowed to stand exposed to cold; poisonous substances mixed with food: but the most fruitful cause is the change of food. Perhaps there are more cases of inflammation produced by this last cause than all others.

Whatever is used as cathartics in cases of inflammation caused by this larvæ in horses, they should always be accompanied with gruel, boiled starch, flax-seed tea, or some thing of the kind, to prevent irritation; and the animal treated in every respect as for an inflammation of the bowels, without any regard to its being caused by bots, and no medicine should be given in the one case which would not be proper in the other. The whole course to be pursued may be summed up in a few words: first bleed, give physic, follow it with mucilaginous drinks, keep the animal warm, and if he recovers, feed moderately for several days.—[Goodsell's Farmer.]

CURE FOR THE BOTS OR GRUBS IN HORSES.—If you will excuse the subject, (for although graceless, it is valuable not only to agriculturists but to all classes, using that valuable animal the Horse,) I send you a remedy I used while our coals were brought to market in road waggons, which obliged us to use a great number of horses; and I never knew it fail of giving relief, in from one to five minutes, viz.: Pour out half a gill of spirit of turpentine

into the hand, and rub it on the breast of the horse while suffering; let it be applied to the hallow or pit of the stomach, just at the point where the neck joins the breast, on a space six to eight inches in diameter. The relief is certain, if the grubs have not already cut through the coats of the stomach.—[Farmers' Register.]

CURE FOR A FILM IN THE EYE OF A HORSE OR OX.—Edward S. Jarvis, Esq. of Surry, Me. in a letter to Mr. Joseph R. Newell, proprietor of the Boston Agricultural Warehouse, states as follows:

Have you ever heard of a cure for a film on the eye of a horse or an ox? I was told of one eighteen or twenty years ago, and have been in the practice of it ever since with perfect success. It was brought to my mind by just having had a proof of its successful application in a calf that had its eye hurt by a blow from another creature. A film formed over it, and it was thought its eye was lost. But by turning into the opposite ear a great spoonful of melted hog's fat, it was cured in 24 hours. I do not pretend to account for this, but I have seen it tried with success so often, that I think it ought to be made public, if it has not been before. I learned it of an Indian.

INOCULATING.—Mr. A. Robinson, in the Northern Farmer, gives an account of his method. He says—

I have found that instead of striking a horizontal, it is best to cut quite a sloping stroke, splitting down from this slope, perpendicularly, so low as to admit the bud, taken off in an oval shape, in the same careful manner as above described; having as much care to preserve a little wood at the eye of the bud as I had in taking it away in the former process. The bud then is to be thrust under the raised bark, down so low as to admit the bark of the stock to come in its former place, above the bud, for half an inch, where it immediately receives its usual nourishment; being bound up with coarse woollen yarn, which I prefer to any thing else. In winding on the yarn I am careful to draw it gently over the wound, omitting to cover the bud till the last, over which I then draw the yarn very softly. In this process, every part works so natural, and so smooth, if unbound the next day it would be difficult to distinguish the bud from a natural one; and, indeed, the bud as well as the bark of the stock seems not in the least affected. In this mode of inoculating, there is no such thing as not taking. On the other hand, the bark being cut square across, and the bud not being sufficiently thrust down, the bark of the stock coming to bear on the outer bark of the bud, at top of the slit, there is nothing to support it; but it dries and shrinks from its primitive place, admits air, and if the wood is taken out of the bud, it all fails together, especially if the eye of the bud is a little rubbed; at any rate, live or die, a dangerous wound is inflicted.

LIVE STOCK IN ROSS COUNTY, OHIO.—The amount of pork put up in this county during the year is about 20,000 barrels, worth about \$10 per barrel, besides a considerable amount which was driven to the eastern markets on foot. About 3000 head of fat cattle were sold to purchasers for the eastern markets, worth about \$4.50 per hundred. There was manufactured in Ross county about 40,000 barrels of flour, worth \$3.50 per barrel. This statement refers mostly to the amount exported, and sold by our farmers and dealers in the articles above specified.

THE BLACK OR COMMON ELDER.—The virtues of the elder are but little known among us. In continental Europe it is used with success in many diseases. From Hippocrates down to the present time, we are told by the French Society of Naturalists, the elder has been employed in medicine. Every one knows,

say they, its virtues and properties; they are not equivocal, for time and experience have confirmed them.

Its flowers are resolute, anodyne and emollient. Infused and drank like tea, they provoke and establish perspiration in certain fevers, colds and catarrhs. Fried with eggs, they operate as a purge; applied as a fomentation in the erysipelas, they reduce the heat and irritation, and are excellent in all inflammations of the skin; warmed and applied to the forehead and temples, they cure the migrains. They are used in the vapor bath for swollen legs, particularly in the dropsy, in which disease the berries, inner bark and roots of this plant are used with effect as diuretics and purgatives. From the berries a rob or thick syrup is made, which is given with success in bowel complaints, particularly in the dysentery.

Its flowers give a fine perfume to vinegar, and to wine the flavor of muscat. Apples, when laid on a bed of the flowers of elder when dried, and then confined from the air, acquire an exquisite taste. A decoction of its berries dyes linen, after passing it through alum water, of a greenish brown color, and from them good brandy can be distilled.

An English farmer, in the county of Devonshire, at a season when the whole of vegetation was destroyed by caterpillars, grasshoppers and other insects, observed that the elder remained untouched, in full health and vigor. This induced him to make an experiment which was attended with perfect success. With boughs of the elder he went over his fields whipping and rubbing gently his turnips, cabbage plants, wheat, &c., which drove off all those noxious insects, and they never returned to their destructive work. The strong stinking scent of the plant destroyed the eggs of these insects. Since that time the process has been used with success on fruit trees, and all other plants when attacked by insects. Some boil the branches, leaves, &c. of the elder in water, and then sprinkle it over those plants and trees attacked by insects, which has the desired effect.

This shrub flowers in June; after picking the flowers and berries they should be dried in the sun, and then laid up in a clean place free from moisture, for medicinal purposes.

There are varieties of the common elder. Some plants have deeply indented leaves. The leaves of some are streaked with yellow, others with white, and some with yellow and white. Some bear white and others green berries. The elder is multiplied by seeds, layers, and slips. They take root rapidly when planted in slips, as do most plants having much pith.

Hedges of elder are common in some parts of Europe. They are impenetrable, of long duration, and not subject to the depredations of cattle, from their odor being very offensive to them. Sheep will sometimes eat them.

The wood of roots of the elder is used in Germany and France in making toys, sword canes, snuff boxes, fishing rods, combs, and other articles, and by cabinet-makers and turners. WM. LEE.—[N. E. Farmer.]

CORN-SHUCK MATTRESSES.—As the laudable object of the Farmers' Register is to diffuse as widely as possible the mass of knowledge which relates to domestic economy, thereby procuring for the many the comforts which are at present possessed by the few; I take peculiar pleasure in aiding the benevolent design, so far as the narrow limits of my own information extend: and so, methinks, should every matron whose experience has surmounted the perplexities of household cares. For this purpose, I have deemed it of some importance to call the attention of its readers to the use of shucks in making mattresses. I have often been surprised to find shucks so rare in families, where every convenience was at hand to make (with the most inconsiderable expense) this article of comfort and utility.

Nothing but a little management is required for every farmer's family in the state to possess

them. Independent of the comfort of mattresses in summer, I have often heard experienced physicians plead hard for their general use in this bilious climate; though common sense, I should suppose, is sufficient to discover the relaxing and debilitating effects of being nightly smothered on a feather bed, through the heat of summer; and the increased suffering produced by their use, during the prevalence of fevers, incident to our climate.

For my own part, I have often suffered painful regret, as I have looked on the sick beds of the poor, where the possession of a hair mattress would be a luxury next to an impossibility for them to obtain; but I am happy to say, that the discovery of the use of backed shucks obviates all pecuniary difficulties, in the farmer's case at least.

There are few families in Virginia, where there are not some slaves, incapacitated by age or decrepitude for active labor; and since the bright era, which introduced the cotton gin, to supersede the use of fingers in picking cotton, they are thrown out of employment altogether; or have little else to do than to sit and stupify in the chimney corner. Now, for the benefit of all parties, I would recommend that a plenty of shucks, a flax hackle or common fork, and a barrel, should be conveniently arranged for the occasional exercise of the subject's faculties, until a sufficient quantity is shredded and packed up. When you have prepared your tick, and the weather is suitable, immerse and soak the shucks well in clean water, and then spread them thin in the hot sun to dry. This will cause them to curl and acquire the elasticity of hair. Be careful after hackling every bunch, to cut off the hard ends.

These shucks stuffed in a common tick, and tacked in squares through and through, will be quite comfortable on a feather bed, where cotton cannot be afforded—but if a case is made after the mattress style, and batts of carded cotton laid at the top and bottom, of several thicknesses, and neatly tacked in squares, they may be made to equal, if not surpass any hair mattress, for you can have them as thick as you choose; and in neatness and purity of material, they will surpass, the hair, though they may not in durability. I should think it a useless or presumptuous display of my own knowledge on the subject, to describe farther the process of making mattresses, but that I was told by an intelligent young housewife, that she had no idea how they could be conveniently completed. As I shall, in such dilemmas, ever feel it a delightful task to assist the young idea, I will merely suggest, that the piece which divides the top and bottom of the mattress case should be sewed all round the bottom, and bound with tape made for the purpose. The top part should be sewed to one side of this piece only, like a lid to turn back, until the batts of corded cotton are laid on the bottom of several thicknesses, and the shucks carefully and regularly packed in.—Place the layers of cotton again over the shucks, and turn the lid over all, and bind it round like the bottom. It must be then laid on a frame, for the purpose of tacking it through and through. This will require a very long needle, which can be made at any blacksmith's shop.—A FRIEND TO COMFORT. February 20th, 1834.—[Farmers' Register.]

SHALLOW PLOUGHING.—I haul out my coarse manure and scatter it on the land, where it is most stiff and close and then use a one or two-horse turning plough to plough the manure in, but am careful not to break the land more than three or four inches deep. I then haul out my fine manure on another part of my cotton land, and let it remain in ox load heaps, till I can finish ploughing the land with the same turning plough, or a trowel hoe plough, as I may find most convenient, and then scatter the fine manure, and harrow it in with a five-tooth harrow.—[Farmers' Register.]

NEW-YORK AMERICAN.

APRIL 10—20, 1834.

LITERARY NOTICES.

THE REVIEW OF THE WEEK—which we had prepared at some length—is of stern necessity, excluded to-day—and we fear, such is the aspect of public affairs; until next Saturday.

SUMMARY.

[From the Salem Gazette.]

Mr. Benjamin Gile, of Danvers, whose name will be found in our list of deaths, was a man of a vigorous and independent mind, and of extensive information. Books were the chief source of his happiness through life. In his youth he served several campaigns in the Army of the Revolution; during the siege of Rhode Island in 1778 he served in a company commanded by his father, Capt. Ezekiel Gile, of Plainfield, in Col. Peabody's New Hampshire Regiment.

His Pension Certificate was received from the War Department on the day of his death—but for a part of his services. He served six months as a substitute for a man named Davis; for this service the Pension agent refused to allow the pension, because Davis's name was kept on the Rolls, instead of Gile's, though Davis himself, and several others, swore that Davis *did not*, and that Gile *did* serve during all that period,—thus affording an example how Truth and Justice are often baffled and defeated by artificial and technical jargon! In a battle during that campaign the two Lieutenants of the Company were killed by his side, Lieut. Dearborn by a cannon shot, and Lieut. Cobb by a musket ball through his heart,—yet the official rules of evidence have made it out that Mr. G. was not exposed to danger during that campaign.

FOREIGN EXTRACTS.—The press and importance of domestic affairs have absorbed all attention and all interest so much recently, that we have found little room for any items from foreign countries. We present today, however, two or three extracts from London papers somewhat curious.

The first is from the Times of 26th February, and is an exposition that really would seem hardly credible, but for the undoubted facts on which it is founded, of the open and extensive corruption of an English election—that of Liverpool.

[From the Times.]

The published evidence, taken before successive committees of the House of Commons in 1831, in 1832, in 1833, and more lately that obtained by the Commissioners of Municipal Inquiry, sufficiently establish these facts, and must dissipate all doubts on the subject, either now or hereafter. It is proved in these documents that the elections both of the magistrates and members of Parliament for the borough have, on several occasions of late, been influenced by the grossest pecuniary corruption and the most prodigal use of treating; that at the contest for the mayoralty in 1827, one of the candidates expended between £7,000 and £8,000, and the other about £12,000; that votes which were sold at 6s. each at the commencement, rose in market price to £12 and even £20, before the conclusion of the struggle; that after the second day, every working freeman who voted on the other side received a bribe; and that they attended the pay-room in crowds to receive their money, as the operatives of a factory to receive their week's wages. It is established likewise on the most irresistible evidence, that in the grander political contest of November, 1830, between Mr. Denison and Mr. Ewart, for the seat in Parliament, vacant by the death of Mr. Huskisson, each of the candidates expended upwards of £40,000!! It is stated by one of the witnesses who audited Mr. Denison's accounts, that the expenditure on the part of that gentleman amounted to £44,000, after deducting £3,000 from publicans' bills, which the Committee disallowed; and a witness from Mr. Ewart's committee admitted that though £34,000 passed through his hands, that sum did not include the whole of Mr. Ewart's expenses.

On this occasion likewise votes rose in price as the contest advanced, and towards its conclusion a single vote was sold for £80!! Nearly every freeman who came to the poll was bribed. The tickets given for enabling parties to claim payment from Mr. Denison's committee amounted to about 2,000; and one of the witnesses having obtained these tickets, copied from them into a poll-book against the name of each voter the sum which had been paid him. The fol-

lowing is the analysis of the list of the other candidate, Mr. Ewart's voters, with their respective prices, as drawn up by his own law agent:

600 freemen received	£10 and under
462	between 10 and 20
209	20 and 30
24	30 and 40
7	40 and 50
1	60

1,303

One circumstance which disgracefully distinguished the bribery practised on these two occasions from almost every other, was the open, fearless, and shameless manner in which it was conducted. The respective parties advertised for supporters, and announced the price which they were ready to give for votes on the walls of their committee rooms. Tickets or tally-papers were openly distributed, which were as regularly paid. The ingenious conductors of the election had thus the merit of systematizing corruption—of making the sale of consciences a counting-house affair, and of erecting regular banks of bribery, with the proper assortment of promissory-notes or poll-tickets, and bags of gold, with cashiers, examiners, and controllers of accounts!!

Another most striking and most melancholy characteristic of the contest was, not only the universality of the corruption among the poorer freemen, but the height to which the tide rose among persons in better circumstances, whom, but for the levelling nature of the system, and the gradual decay of the moral sense which it produces, the infamy ought not to have reached. It was mentioned by the Treasurer of Mr. Ewart's committee, that several "respectable" persons received large sums of money. A retired brewer demanded £50; a captain in the militia received 35l.; three brothers, "respectable men," were paid 30l. a piece; a druggist and his father, "both respectable men," received each 20l.; and a "respectable man," worth 10,000l., as he came early in the contest, was satisfied to pocket the paltry sum of 12l.!

A third revolting feature in these disgraceful transactions was, that some of the freemen, after promising their votes to one side, and taking its bribe, broke their infamous compact by incurring the additional infamy of accepting the money and supporting the cause of the other. The system of corruption and profligacy which distinguished these contests was so disgusting, that the Grand Jury of the borough presented it as a nuisance to the Town Council, whom they invited to abate it.

Now, such are the freemen or burgesses whom it is proposed to disfranchise—such is the system which it is proposed to destroy. It is in evidence that 2,661 of these burgesses received bribes in 1830; that nearly 2000 of the same persons still remain on the register entitled to vote; and it is well known, that though all householders, paying a rent of 10l. or upwards, are entitled to share with such corrupt men in electing their Parliamentary representatives, yet that the latter enjoy exclusively the power of electing the chief magistrate and bailiffs of the borough. The whole number of these old burgesses now resident does not probably much exceed the roll of those against whom corruption was proved, if we deduct from the former such respectable voters as never received a bribe, and who would compose a part of the new constituency in whatever manner it were modified. That the number of voters in Liverpool would not become inadequately low for every purpose of independent action, even though the comparatively small body of freemen who cannot rent a house at 10l. value were struck off the list, will readily be admitted when it is considered that nearly 8,000 householders are already registered under the Reform Act, and that the number is constantly increasing.

The next, item is from a debate on the army estimates in the House of Commons. It is curious mainly from the speech of Cobbett.

Army Estimates.

Mr. Ellice thought it unnecessary, after the discussion which took place on Friday evening last, on the subject of these estimates, and after the house had voted the numbers of the effective service, to do more than put the first vote into the hands of the chairman. At the same time he should be very ready to answer any question which might be put to him respecting the various items, in order that they might be fully and clearly understood. The right hon. gentleman then moved the first vote,—“That a sum not exceeding 3,056,873l. 18s. 11d. be granted to defray the charges of His Majesty's land forces, for

service at home and abroad (except the regiments employed in the territorial possessions of the East India Company).

Mr. Cobbett offered no objection to the numbers of the army, because he was quite certain that 50,000,000l. of taxes could not be collected in gold without a standing army of 90,000 or 100,000 men. He felt it however, his duty to offer some objection to the pay of the army. The lowest private soldier received 7s. 7d. a week, exclusive of meat, bread, coal, and candles, and a sum of 68,000l. was expended to supply him with small beer, or something in lieu thereof. But the sum received by the soldier was not so objectionable in itself as it appeared on comparison with the amount of wages received by laborers in the country. An hon. baronet, who accused him of exciting the people to acts of incendiarism, had in a letter to the poor law commissioners stated that the farmers had, in consequence of the fires, raised the laborers' wages from 3s. 9d. to 5s. a week. The hon. baronet had also stated that the farmers grumbled greatly at the rise which had taken place in wages, leaving it to be fairly inferred that he considered 5s. a week too much money to be given to a laborer for his week's work. Would that hon. baronet consent to vote 7s. 7d. a week to the soldier, and at the same time tell the laborer that he was paid too highly if he received 6s.? But in estimating the soldier's pay at 7s. 7d. per week, he was confident that he underrated the amount. He believed it it would be found, one thing with another, to be equal to 1s. 6d. a day. “But,” said the right hon. secretary, “the pay which the soldier received was not too much, considering the hardships and fatigues he was obliged to endure; he was continually changing his quarters—at one time broiling under a burning sun, and at another frost-bitten by cold.” The right hon. secretary was a very wise, sincere, able, and honest man, no doubt (general cries of “Hear, hear,”) but the right hon. secretary knew nothing about what he was talking of, (laughter—not so much as the youngest of his children, who was now probably in the cradle. (More laughter.) He (Mr. Cobbett) did know something of this matter from experience. He had not been under a broiling sun, it was true, but he had been at least as at cold a region as any to which British troops were sent, and had remained there 7 years together. “I happen to know,” continued the hon. member, what so hot of life we led there; and if ever there was a pleasant life, ours was one.

Our summers were passed in fishing, shooting wild pigeons, rambling about the woods, and visiting the dwellings of the Yankee girls. (Laughter.) In winter our time was spent in skating on the river, walking about in snow shoes, or sitting before an excellent fire, singing, laughing, and drinking rum at 7d. per quart. (Laughter.) We had 7lb. of flour per week, 4lb. of the best meat, 6oz. of butter, a quarter of peas, and a quarter of rice—a greater allowance than falls to the lot of any two laborers in England.” He thought, after this statement, that the House would not be of opinion that the condition of British troops abroad was very arduous. However, as a bargain had been made with the soldiers for the present year, he would not propose that it should be broken, though he would oppose its renewal. “But,” asked the right hon. Secretary, “how can the soldiers be got rid of?” What, then, were they Janissaries? Could not his present majesty get rid of them as easily as the late King got rid of Sir Robert Wilson? What he objected to was the amount of pay given to the soldiers; while the laboring people of this country were so poorly remunerated for their work. He was afraid that the laborers, badly off as they were, had no chance of seeing their condition bettered, for he found it proposed by the poor law commissioners that they should be shut up in a sort of Bastille. But what else was to be expected from a report, the joint work of bishops, lawyers, and newspaper reporters? The hon. member concluded by saying that he should propose no amendment, as he understood a contract had been made for the present year, which must in fairness towards the soldiers be fulfilled.

Sir H. Hardinge had heard the hon. member for Oldham's speech with great astonishment. He did not think that the hon. member, who had once the honor of belonging to the army, would introduce topics calculated to lower the credit and character of the soldier. (Hear, hear.) He (Sir H. Hardinge) would show to the house that the British soldier received, at the present moment, smaller allowances than any other class but one of his Majesty's subjects. The report of the poor law commissioners distinctly stated that the soldier was ill-paid, as compared with other classes of his Majesty's subjects; and it further appeared from the same

document that the soldiers' was only brown bread, and that the convicts, who were supplied with white bread, held it up before the eyes of the soldiers asking them, in derision, how they liked their "Brown Tommy." He (Sir H. Hardinge) was ready to admit that, under existing circumstances, the soldier was sufficiently paid, but he was sure the house would not think that he was overpaid. (Hear, hear.) A pauper's family was better maintained by the country than a soldier's. In very few poor-houses indeed was any distinction made between the diet of females and males, of children and adults; while in the army, the women were allowed only half the rations given to the men, and the children half of that given to the females. It appeared also from a scale of the comparative comfort enjoyed by different classes of his Majesty's subjects, given in the report of the commissioners, that the soldier was the worst off almost of all. The lowest in the scale was the independent agricultural laborer; just above him was the soldier; then came the able-bodied pauper; next the suspected thief; then the convicted thief; and the highest in the scale—he who enjoyed the greatest degree of comfort—was the transported felon. He was ready to admit that the state of despondency into which a convict was likely to fall rendered it necessary, perhaps, to give him a greater quantity of food than was supplied to the other persons in the scale; but the point he was contending to establish was, that, in reality, the soldier was worse off than a person guilty of crime, and sentenced to transportation. (Hear, hear.) He therefore trusted that no reduction would be tolerated in the soldier's pay.

The next, is the report of a case of forgery; the delinquent in which, it appears, had taken refuge in this country, was tracked, followed, taken back and convicted.

SATURDAY, MARCH 8.

Forgery.—The King v. Edmund Campbell Brewer. The prisoner was indicted for the forgery of a bill of exchange for 13l. 5s. with intent to defraud the Stourbridge Canal Company. There were other counts stating different intents.

Mr. Whately, Mr. Godson, and Mr. Scott conducted the prosecution, and Mr. Carrington and Mr. Lee defended him.

John Perry, examined by Mr. Godson.—I am an ironmonger at Stourbridge. The Stourbridge Canal Company owed me 11l. 14s. 10 1/2d. The prisoner was their agent. I applied to him at the end of last July for my account. He came to my house, and brought a bill drawn for 13l. 5s., to pay that account, and to pay the balance on his own private account.—There was an endorsement "Richard Smith—per proc. of Stourbridge Canal Company. E. C. Brewer." I paid away the bill. It came back dishonored on the 22d of October, and I sent it to the Canal Company's agent, Morris. (The bill was read. It was a bill dated the 25th of August, for two months, payable to Richard Smith or bearer, drawn by William Jones upon Messrs. Hanburs & Co., bankers, London.)

Cross-examined by Mr. Lee.—I had not received bills from the company that year.

Thomas Morris examined by Mr. Scott.—I have audited the account of the company. Prisoner came into their service in August, 1831. I occasionally audited his accounts. It was his duty to settle the accounts of the company. In September last I was about to audit his accounts, and prisoner sent me a note, stating that he had had permission to go out of town for a day or two, and should return on Tuesday, and would take all blame at the committee at his (witness's) not being ready. It was dated Sunday evening. He never returned into the service of the company, but absconded. I know the prisoner's hand writing. I believe the whole bill to be in his hand writing, and the endorsements also.

Cross-examined.—The endorsement is different from the face of the bill, but I believe it to be his hand writing.

Henry Eberhart, clerk to Messrs. Roberts, attorneys at Stourbridge, pursued the prisoner to Liverpool, and then embarked for America. Arrived at New York, and from inquiries found him at Utica, 300 miles up the country. There he was apprehended and carried before a magistrate, whence he was brought back to England, and delivered to the constable. After he was brought back to England, and was at Stourbridge, I asked the prisoner who was Richard Smith, the endorser. He hesitated for some time, and then said, "He is a friend of mine, and gave me the money to take it up." I asked him where he lived, and told him that if he had paid the money, Smith could not be hurt. He said "Yes, he

may." I asked him who was Jones, and said the whole bill was in his handwriting. He said "yes." After a little pause, he said "I know I should be prosecuted on this bill, but having found myself involved, I uttered it, and stopped." He said he had paid it to Mr. Perry.

Cross-examined.—I had no power with me to bring him back from America. He came back voluntarily with me. He was at liberty afterwards, and during the voyage.

Craig, the constable, on the 27th of November last, received prisoner into his custody, and the prisoner told him the same story as to the last witness. He said it was drawn by Smith, but the names were fictitious, and asked if the crime was the same as if the names were known. The witness said he did not know. Prisoner said the last word he said when he left England was, he wished them to take up the bill. On the 29th, he wrote a note to Mr. Payne, requesting him to inquire as to that same question of Mr. Grazebrook, or some other attorney. This note was kept by Craig the constable.

It was proved that no person of the name of W. Jones, near Birmingham, banked at Hambury's, and that the person of the name of Smith was not known there.

The prisoner, a respectable young man, declined saying anything.

Mr. Whately, for the prosecution, stated that the prisoner had borne an excellent character, and had filled a place of great credit for many years.

Mr. Justice Parke summed up the case to the jury, who found the prisoner GUILTY. Sentenced to be transported for life.

The following is the plan of the Federal Constitution of Switzerland, which was to be presented to the Assembly of the Zofining, on the 26th February.—It is divided into two parts—general principles and special provisions. Among the general principles, the most important is that which declares the sovereignty of the nation. Paragraph 8 declares the Swiss territory to be one and indivisible, and stipulates a complete equality of rights for all the inhabitants. The liberty of the Press and the freedom of discussion, are acknowledged without any restrictions. The first part of the compact, which comprises the general principle in 12 paragraphs, can never be altered. Among the special provisions, we observe by paragraph 13 the nation is divided into tribes, and the country into cantons. Paragraph 14 is in the following terms:

"The Executive of the Federal Constitution is entrusted to a Diet, the members of which are to be elected by the tribes in the proportion of the amount of their population.—Paragraph 17. The tribes of Switzerland are to contribute in proportion to their resources to the support and the expenses of the State.—Paragraph 18. The Confederation will establish at its own charges such patriotic institutions as the tribes of themselves are enabled to establish.—Paragraph 19. The tribes will have the right of giving themselves special Constitutions, but on the express condition that they are not at variance with the general Federal Constitution."—[National Gazette.]

"Scenes from the Life of Edward Lascelles, Gent.—Whatever investigations the captain had instituted with regard to the individual with whom the fire had originated, the result was totally unknown, except to the parties concerned. That due inquiry had been made, we all felt quite assured; for the crime was one of a very serious nature, and not likely to be overlooked by so strict a disciplinarian as Captain Morley. Nay, when the systematic arrangement of every thing on board, and the correct information the captain usually had of what passed in the ship, was considered, it seemed extremely probable that the guilty person had been detected. It was not, therefore, matter of astonishment to myself, or any one else, when at six bells in the forenoon, all hands were turned up for punishment. In the fore-part of the quarter-deck stood Captain Morley, dressed in full uniform, holding a folded paper in his hand, apparently the articles of war. Near him were the different officers, in cocked-hats and side-arms; and a little farther removed, the men.—All was now anxiety as to the culprit; and there was a general murmur of regret and surprise when Richard Elkins, the boatswain's yeoman, was called forward and committed to the custody of the master-at-arms. If there was one man on board the *Hesperus* a greater and more general favorite than another, it was Elkins. Civil and obliging to his superiors, kind and friendly to his equals, an excellent seaman, and always ready at the call of duty, he was respected and beloved both by officers and men.—

During the war he had been engaged in the hottest of the fray, and bore many honorable wounds in testimony of his gallantry. Repeatedly had he led the van of his comrades in boarding the enemy; twice had he, by his prowess, and at great personal risk, saved the life of an officer; and on one occasion he swam to the Admiral with despatches when the iron shower of balls and grape fell so thick that no boat could be trusted on the water.

The captain, having read before an uncovered audience the clause in the articles of war which related to the crime, folded up the paper, and with a tone of deep emotion addressed the unhappy man nearly in these words:

"Richard Elkins! through your carelessness yesterday the ship was nearly destroyed by fire; and your shipmates have only been saved from the most dreadful of deaths, by the merciful intercession of that Being before whose awful throne you had nearly hurried them. You have broken the articles of war, having, in direct opposition to orders, removed a lighted candle from the lantern in which it was placed for safety, and fastening it to a beam, left it burning in that situation when you went to supper, (four o'clock, p. m.) In consequence of this act of disobedience and neglect on your part, the fire broke out in the boatswain's store-room. Is this the case, sir, or is it not?"

"It is, sir!"

"I therefore consider it my duty to punish you, as an example to the rest of the crew; and much do I regret that one who is in every respect so deserving a man should have incurred so severe a penalty.—Strip, sir!"

Without a syllable in his own defence, or a single plea for mercy, he took off his coat and shirt, and his brawny wrists were tied to the gratings. One only appeal he made, but not in words; it was merely an expressive glance of his eye, by which he seemed to request the intercession of his officers and comrades. The benevolent commander marked that glance, and it was reflected back from his own countenance, as if he wished to second the appeal. But in vain; no one spoke, for all knew that the offence was too heinous to be forgiven.

The boatswain had taken off his coat, preparatory to giving the first dozen—the cat was ready in his hand—the stiff figure of the master-at-arms stood by, prepared to record the stripes, and the captain paced to and fro upon the deck, chucking into the air a small bunch of keys—his common practice when he was agitated. After making several turns of the quarter-deck, he at length stopped, and every one expected that he was about to give the signal to commence.—For a moment he stood gazing on the culprit: it was an interval of the most anxious suspense, and all eyes were eagerly fixed on him. At last, turning towards the boatswain, he raised his hand gently upwards, and gave the unexpected order—"Cast him off!" (unbind him.) In an instant the bonds fell from the poor fellow's arms, and he stood, unshackled and undisciplined, among his comrades.

"Elkins!" said the captain, "I cannot flog you; it is not twenty-four hours since God forgave us all; it is meet that I should now forgive you. Pipe down, Mr. Parsons!"

Three rounds of such hearty cheers, as made the timbers of the *Old Hesperus* ring again, succeeded this short, but truly eloquent address; and I believe I was not the only one on board who envied our noble-minded commander the grateful applause of the seer within his own breast—an applause which, certainly, he must have that day experienced.

The *Instituteur*, a journal of primary instruction presents the following general results of elementary instruction in the departments:—The number of children of both sexes who learn to read is nearly 2,000,000. But almost half the communes of France refuse to tax themselves voluntarily to assist the Government in spreading the blessings of popular instruction:—

Number of Schools.	
Elementary Primary	35,007
Superior Primary	373
Private	9,092
Total	44,472
Number of Pupils who frequent the Schools.	
Boys	1,175,248
Girls	731,773

Total - 1,907,021
Total expense of primary instruction, 10,172,706f. 19c.; portion of this expense paid by the communes, 7,693,793f. 50c.; ditto by the departments, 2,054,051f. 41c. Number of communes taxed *ex officio* 19,032. Amount of the taxes, 1,994,319f. 60c.

The unparalleled enterprise of the Yankees is manifested in every quarter of the world. The Governor General of India, Lord William Bentinck, has presented Mr. Rogers, supercargo of the ship *Tuscany*, with a handsome Silver Vase, bearing the following inscription:

"Presented by Lord William Bentinck, Governor General and Commander in Chief of India, to Mr. Rogers, of Boston, in acknowledgment of the spirit and enterprise, which projected and successfully executed the first attempt to import a cargo of American Ice into Calcutta."

The Vase is of a chaste and classic form, ornamented with flowers and fruit, intersected with foliage, and richly embossed.

Banks of Alexandria.—The Directors of the two banks which remain in Alexandria, viz: the Bank of Potomac and the Farmers' Bank, have announced that they will hold themselves personally responsible for the debts of those institutions respectively. The run upon them had ceased and the panic in a great measure subsided.

[From the Norfolk Beacon.]

THE PROSPECTS OF THE CROPS—GLOOMY INDEED!—We continue to receive the most depressing accounts of the prospects of the coming crops, produced by the flooding of the low grounds by the late unexampled heavy rains. We learn from Farmers in the vicinity, that those who have planted corn in their low grounds, have had it entirely drowned, and that where they have not planted, the ground continues so soaked as to prevent its being prepared for that operation. A respectable gentleman who has recently passed through several of the proximate Counties of N. Carolina, states that there also the prospects for the corn crops are quite disheartening.

The New Orleans Courier of 2d April, notifies, under some of the most respectable signatures of the city, a public meeting to convene for the adoption of measures, to give to the tragedian, Cooper, a benefit on the plan of that given to him in this city.

THE POLES.—At a meeting held, in pursuance of a public notice; at the Merchants' Exchange, on Saturday, the 19th of April, Abraham Ogden, was appointed Chairman, and Wm. B. Townsend, was appointed Secretary.

Resolved, That Albert Gallatin, Wm. B. Townsend, Theodore Dwight, James G. King, William W. Woolsey, S. V. S. Wilder, Pele. Perit, Moses H. Grinnell, be appointed a Committee for the purpose of collecting subscriptions here and elsewhere, and of distributing the same, for the relief of such exiles from Poland, as have been, or may be, landed in this city, and to devise such other means as may be needful for the purpose of carrying into effect, the benevolent views of the subscribers to the Polish Fund.

On motion, Resolved, That William W. Woolsey be appointed Treasurer of the Polish Fund, to whom all donations may be paid. A. M. OGDEN, Chairman.

Wm. B. Townsend, Secretary. The papers in this and other cities are requested to publish the above proceedings.

The ship *St. Andrew* was safely and beautifully launched this morning, about 9 o'clock. She will take her place in June, as a Liverpool packet, under the command of Captain Taubman.

Shipwreck.—The schooner *Diluvian*, (late) Green, master, from Baltimore bound to Charleston, when 15 or 20 days out, encountered a heavy gale in the Gulf Stream, during which Capt. Green was washed overboard and lost—both pumps choked, and the vessel having filled with water, the crew, with the assistance of Mr. Harrison, a passenger, by great exertions kept her before the wind and made for the land, which they fortunately reached about 15 miles to the southward of Cape Henry, on Friday night last, where they put the vessel on shore. The cargo consisted of corn, whiskey, coffee and flour, which has been mostly saved, though in a damaged state, and has been turned over to the Commissioners of wrecks. The vessel, we learn, may possibly be got off.—[Norfolk Herald, 16th April.]

WILKESBARR, (Pa.) 16th April.—**Reward of Chivalry.**—A young hero by the name of Horace Williams was sentenced during our present session of Court to one year's imprisonment in the penitentiary and to pay a fine of \$500 for challenging to a duel. We believe this is the first conviction of the kind in

this county, and trust it will operate as a warning to others. A few such examples in different parts of the United States would effectually exterminate this despicable practice.

NORFOLK, April 16th, 1834.—**Arrival of the U. S. schr. Enterprize.**—The U. S. schr *Enterprize*, Lt. Com. DOWNING, 37 days from Rio Janeiro, arrived at the Naval anchorage this morning. Officers and crew all well.

The U. S. ship *Peacock*, Capt. GRISINGER, and schr *Boxer*, Lt. Com. FARRAUGT, were at Rio 8th March, all well—the former waiting the arrival of the *Natchez*—the latter repairing.

The U. S. ship *Ontario*, Capt. SALTER, had sailed for the River La Plata.

The U. S. ship *Natchez*, Capt. ZANTZINGER, bearing the broad pendant of Com. WOOLSEY, was daily looked for at Rio from Montevideo.

The U. S. ship *Lexington*, Capt. MCKEEVER, sailed for Portsmouth, N. H. 8 days previous to the sailing of the *Enterprize*.

Lieut. Com. WILLIAM F. SHIELDS, late Commander of the *Boxer*, and Midshipman WILLIAM H. BROWN, late acting sailing master of the *Peacock*, (for his examination) came passengers in the *Enterprize*. The E. left at Rio, several American vessels, among which were Ships *Extio*, Walker, for New York, in 10 days, and Brig *Sabra*, Winslow, for Richmond, in 7 do. The Brig *Barbary*, Brown, after being 10 days out, bound to Antwerp, had put back leaky. No news at Rio—Markets looking up.

List of Officers of the Enterprize.

SAMUEL W. DOWNING, Lieut. Commanding.
Timothy B. Benham, 1st Lieut.
James M. Watson, 2d do.
George Blacknal, Ass. Surgeon.
William P. Zantzinger; Purser.
Alexander C. Maury, Act'g Master.
Richard Forrest, Mid'n
Thomas T. Hunter, do.
Levin Handy, do.
Alex'r M. Pennoek, do.
John D'Camp, do.
John Mooney, do.
William P. Milnor, do.
Charles Fales, Gunner.
Edward Harrison, Act'g Boatwain.
Charles B. Wright, Purser's Steward.

COMMERCIAL RECORD.

REVIEW OF THE NEW-YORK MARKET, APRIL 19.
ASHES.—The transactions have been limited until the close of business yesterday, when about 80 bbls. fresh inspected Pots were sold at \$4.25.

CLOVERSEED.—Small sales of good quality were made yesterday at 63 cents.

COAL.—A cargo of 120 tons Liverpool Orrel was sold at \$3.75, on time. A good deal of Anthracite lies over.

COCOA.—250 bags Para sold at 5 cts., 4 mos.

COFFEE.—There has been quite an active demand since our last report, and the sales amount to about 6000 bags—embracing about 1000 St. Domingo at 10 1/2 cents; 250 new crop, 11 1/2 a 12; 5 a 600 Laguna, 11 1/2 a 11 3/4; 100 good Porto Rico, 12; some Cuba, 10 a 10 1/2; Manila, 12 1/2; Java, 12; a large parcel of Sumatra at a price not reported; and, by auction, 585 bags old crop Brazil, 10 1/2 cents, 4 mos., and 68 bags Cuba, good, 11 1/2 a 11 3/4 cents, 3 and 4 mos. The transactions have been both for home use and export, and the stock is very much reduced.

COPPER.—Sales of sheeting have been made at 23 1/2 cents.
COTTON.—Prices are fully maintained, and in consequence of the limited supply, an advance has in some instances been realized. The sales of the week amount to 1200. Stock on hand only 13,654 bales of all sorts.

Imports here—
New Orleans.....30
Florida.....193
Alabama.....763
South Carolina.....237
North Carolina.....184

Total.....1407 bales.
Total Import, since 1st inst.....6206 bales.
Export, from 1st to 17th inst.....6979 bales.

DOMESTIC GOODS.—There is a fair business doing.
FISH.—Nos. 1 and 2 Mackerel have advanced 25 cents per barrel.

FLAXSEED.—We have no sales to report.
LOUR AND MEAL.—A fair but not very extensive business has been done in Flour, and without any further advance in prices.

FURS.—A large quantity of articles under this head have been offered at auction by the American Fur Co. and others. Only a small proportion of which were sold, and offers not being satisfactory.

GRAIN.—We have no arrivals of Wheat, of which the market is quite bare. Rye and Corn continue in demand at improving prices. No Southern in market. Oats remain as before.

HIDES.—The demand is more active.
HOPS.—We have heard of no sales. The article is extremely dull.

LEAD.—Several sales of New-Orleans Pig have been made this week at 5 1/2 cts. 6 mos., which is a reduction of 1/2 of a cent.

LEATHER.—Some considerable sales have been effected of Sole this week, by auction, at an improvement of 1/4 a 1/2 a cent on the previous transactions.

MOLASSES.—The supplies of late have been hardly equal to the demand.

OILS.—There has been an active demand of Whale Oil, for export, and pretty extensive sales have been made at 26 cents, which is an improvement.

RICE.—There have been no sales of any importance since our last report.

SKINS.—The American Fur Co. sold, by auction, 466 Shaved Deer Skins at 40 cents per lb.; 122 Red and Blue, 35 cts.; and 256 Gray, 25 cents, 5 mos.; 208 Bear Skins, 75 cents, and 169 Cubs, 50 cents each.

SUGARS.—There is a very active demand, and the stock of all descriptions is reduced quite low.

TEAS.—The cargo of the brig *Nabob*, consisting of about 4000 packages, was sold on the 17th, and went off with some degree of firmness, at rates about equal to the previous sales.

WHALEBONE.—A large sale was made at 17 cents, which establishes an advance.

WOOL.—12 bales Saxony Lambs were sold, by auction, yesterday, at 10 1/2 a 100 cents per lb., 4 and 6 mos.

FREIGHTS.—To Liverpool continue dull. To Havre, the packets are readily filled at our rates.

PHILADELPHIA MARKET.—Week ending April 19.

COTTON.—The stock is still very light, and only small parcels selling; the present supply does not exceed 150 bales.

DRUGS AND DYES.—A large parcel was sold by auction his week, at very low prices; some articles were forced off to close accounts.

DRY GOODS.—Continue to decline in value.

FEATHERS.—Western at 37 1/2 a 38c.

FISH.—No extensive sales of any description; our quotations designate value; No. 3 Mackerel are scarce.

FLOUR AND MEAL.—We have to advise a still further advance in almost all descriptions.

HOPS.—Different sorts, selling at 15 a 18c.

OILS.—A further advance in Lined Oil.

PROVISIONS.—150 bbls New York prime Beef, \$6 50; 300 kegs Western Lard, 8 a 8 1/2 cts. 4 mos; 113 do, 7 1/2 cts; 70 do, Jersey, 9 1/2 cts; 600 western Hams, 9c; 10 hhd do, 8 1/2 cts; 60 bbls cargo Pork, \$9 1/2; 30 do Mena, 13 1/2; 25 kegs butter, 8c.

RICE.—45 casks 23, 2 1/2 a 3c.

SEEDS.—Flax seed is worth \$1 25 a 1 30, and Clover, \$3 50—little doing in either.

WOOL.—Considerable demand in Pulled and Fleeced, at quotations. 5 bales washed western, a 33c, on Thursday.

BAITMORE MARKET.—April 22.

A little more animation in the Coffee market; 10 1/2 cts was offered for 400 bags St. Domingo, which offer was declined; it freely brings 11 cts. There is no alteration in prices of Tea; the groceries are well supplied; a cargo daily expected from Canton. Virginia Cotton is scarce, and would readily command 12 a 12 1/2 cts. Rice continues very dull.

The Banks improve in their discounts. Large quantities of Specie that was drawn out during the great excitement have been returned, and we hope soon to see confidence restored, particularly towards country banks.

FLOUR.—There is very little change since our last.

GRAIN.—No arrivals of wheat since our last report.

CHARLESTON MARKET.—April 15.

COTTON.—The sales in Uplands were to a fair extent on Monday and Tuesday, at the full prices of last week. Yesterday later advices having been received from Liverpool via Savannah, of a further decline, purchasers held back until holders conceded to a small reduction, when they again came freely into market.

RICE.—During the first two days of this week, the market exhibited its usual dullness. Yesterday fair sales were made of all descriptions, some lots of very prime and choice were disposed of at \$2 75 and \$2 87 1/2.

SUGARS.—A lot of hhd. New Orleans was offered at auction yesterday on landing.

SAVANNAH, April 12.—**COTTON.**—During the early part of the week, the demand for Upland was moderate. The sales of the week amount to about 3,500 bales. We quote 10 a 12 1/2 a 13 for choice. In Sea Island there has been considerable done, particularly in the common qualities at an advance of from 1 to 3 cents on last week's prices. We quote 24 a 30, and upwards for choice.

FLOUR.—Is selling at our quotations, \$5 a 36.

CORN.—Is retailing at 75 a 80 cts.

FREIGHTS.—To Liverpool, 2d. To Havre, no vessel. To New York, \$1 per bale. To Providence, \$1 1/2 per bale.

MACON, April 10.—**COTTON.**—Extreme prices 8 to 10 cents; principal sales 9 1/2 to 10 cents. Freight to Savannah, \$2 per bale.

MOBILE MARKET.—APRIL 5.

COTTON.—The receipts since our last review are 5300 bales,—the exports 5650.

The demand for cotton during the week has been moderate. Good and fine qualities are scarce.

Wholesale Prices.

COFFEE.—Sales to a fair extent have been made during the week at 13a13 1/2 cts for prime; inferior, dull at 11a12 1/2.

SUGAR.—The small quantity in market sells freely at 8c for prime.

FLOUR.—Import 75 bbls. No transactions have come under our observation.

CORN.—By the barrel \$1.50; in sacks \$1.50a102 1/2.

OATS.—Per barrel \$0.00; in sacks \$1.50a15 1/2.

RICE.—A small quantity has been received this week, which is held at higher rates.

MOBILE, April 4.—**COTTON.**—Sales of this article have not been so brisk, and the demand not as active for the last two days as at the close of last week. The receipts this week amount to 6596 bales quote, choice, 12 a 12 1/2; good, 11 1/2 a 11 3/4; good fair, 10 1/2 a 11; fair, 10 a 10 1/2; middling, 9 1/2 a 9 3/4; ordinary, 9 a 9 1/2.—[Mercantile Advertiser.]

FROM BENJAMIN LEVY'S NEW ORLEANS PRICE CURRENT of April 5.

COTTON.—The market was steady in the commencement of the week, but the sales of Thursday were at a decline of half a cent. This decline is attributable, in part, to late news from Liverpool, which has been of rather an unfavorable character. We have consulted with those well acquainted with the market, and have concluded to make no alterations this week; but they all agree in saying they are extreme prices, and could not, at this moment be obtained, unless for parcels of the very best description.

Liverpool Classification.

Ordinary.....	9 1/2 a 9 3/4
Middling.....	10 a 10 1/2
Fair.....	11 a 11 1/2
Good fair.....	12 a 12 1/2
Good and fine.....	13 a 14

good demand.

Stock on hand.....Bales 105451
SUGAR.—The demand is not as good as formerly.
MOLASSES.—Former rates remain without change, and the demand continues fair at 20 a 21 cents per gallon.
TOBACCO.—The former good demand still continues, and we quote as heretofore 3, 4, and 5 cents per lb.
Stock on hand.....Hhds. 5167
FLOUR.—Like almost every other article of produce, has still further declined in price—the market is overstocked.
CORN.—In the ear, is selling on the Levee at 75 a 87½ cents per bbl. The supply is shelled, is small.
COFFEE.—Fine Havana green is scarce and in good demand. Quotation 1 cent. St Domingo of good quality, is scarce and in fair demand. We now quote fine Havana green at 12½ a 13½, Rio 114 a 124, St. Domingo 10 a 11 cents per lb.
LEAD.—There is a reduction in the price of this article.
FREIGHTS.—We make no alteration in the rates of Freight this week, but merely remark they are dull.

NOW READY,

AN INTERESTING AND USEFUL MAP.

Upon which is delineated nearly all the Railroads now chartered in the U. States. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It may be had either in sheets, price \$1 25, or put up in morocco for pocket maps, price \$1 50, or on rollers at \$2 25, in any quantity, by applying to the subscriber.
D. K. MINOR, 35 Wall street.
New-York, April 2, 1835.

TO CIVIL ENGINEERS.

The Western Railroad Company, incorporated by an act of the General Assembly of the State of Tennessee, for the purpose of constructing a Railroad from the town of Jackson, in the county of Madison, by the most practicable route to the Mississippi river, wish to employ one or more persons as engineers to survey the route and superintend the location and construction of said road. Gentlemen who wish employment in the above capacity, will forward to the undersigned on or before the 3d day of June next, the terms upon which they are willing to engage, also the most unquestionable testimonials of good character and scientific and practical skill in works of the above description. An election of an engineer will not take place before the 3d of June.

By order of the Pres't & Directors.

JOS. H. TALBOT, Cash'r & Sec.

Jackson, March 18, 1834.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22½ miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, plus wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company, WILLIAM NORRIS, Secretary.

December 24, 1833.

For further information on this subject see No. 40, page 772 of this Journal.

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORBURN,

347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine. Mechanics' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bleecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J 35 tf

RAILROAD CAR WHEELS, BOXES AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J5 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Not's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.
m18



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTY, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Hartly.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewing and Hartly.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same.
m23

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New-York,
January 29, 1833.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833.
A29tfm18

RAILWAY IRON.

Ninety-five tons of 1 inch by 1 inch.	Flat Bars in length from 14 to 18 feet counter sunk holes, ends cut at an angle of 45 degrees with splitting plates, nails to suit.
300 do. 1½ do. do.	
40 do. 1½ do. do.	
800 do. 2 do. do.	
800 do. 2½ do. do.	
soon expected.	

250 do. of Edge Rails of 35 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2½, 2½, 3, 3½, 3½, and 3½ inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.
A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.
d71mcowr

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.
J31 8t

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy; also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.
WM. J. YOUNG,

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of two vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I have found it to be much superior to any other instrument of the kind now in use, and as such most cheerfully recommend it to Engineers and Surveyors.
E. M. GILL, Civil Engineer.

Getmantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
Geomet. and Norist. Railroad

THE ARMY.
HEAD QUARTERS OF THE ARMY,
Adjutant General's Office,
WASHINGTON, APRIL 19, 1834.

Order No. 31.

I. The Field Officers of Artillery are assigned as follows:

* 1st Reg't of Artillery,	Colonel, Fort Washington.
	Lt. Col. Fort Severn.
	Major, Fort Moultrie.
+ 2d Reg't of Artillery,	Colonel, Augusta Arsenal, Geo.
	Lt. Colonel, Fort Marion.
	Major, (act'g) Fort Monroe.
+ 3d Reg't of Artillery,	Colonel, Fort Monroe.
	Lt. Colonel, Fort Wolcott.
	Major, Fort Independence.
+ 4th Reg't of Artillery,	Colonel, Fort McHenry.
	Lt. Colonel, Fort Columbus.
	Major, Fort Monroe.

II. Company B, 1st Artillery, now stationed at Fort McHenry, will relieve Company I, of the 4th Artillery, at Fort Severn; and on being so relieved, B't Major Erving, with his company, will repair to Fort McHenry. Capt. F. Whiting's Company, (I,) 1st Artillery, will repair to Fort Washington, and relieve Company F, when B't Major Mason, with his company, will proceed to join the garrison at Fort Monroe.

III. Fort Niagara will be evacuated, and the garrison, consisting of Companies D and H, of the 2d Infantry, will proceed to Fort Gratiot, and there relieve Companies E and H, of the 4th Artillery, when B't Major Payne, with his company, will proceed to New York, and thence, with his company, take post at Fort Trumbull; Company H will join the garrison of Fort Hamilton.

IV. The Head Quarters of the 2d and 4th Regiments of Infantry are transferred, the former from Fort Niagara to Madison Barracks, the latter from Mobile to Baton Rouge.

V. The Field Officers of Artillery and Infantry, will proceed to their respective stations, as above designated, on the 31st of May, or as soon as circumstances will permit; and the movement of troops, under the direction of the respective commanding officers, will take place without unnecessary delay.

VI. Assistant Surgeon Minis is assigned to duty at Castle Pinckney, to which post he will repair without delay. Assistant Surgeon Stinnache will continue on duty at Fort Gratiot.

VII. The garrison of Fort Monroe will no longer be regarded as the exclusive School of Practice;—as, at all military posts, the commanding officer will be responsible for the discipline and proper instruction of the troops, in all their duties. The usual reports and returns from the post, will be made direct to the General of Department, who will exercise the same authority at Fort Monroe as at other military posts within his command: accordingly, the monthly, and other returns and reports, heretofore received from Fort Monroe, as of "The Military School of Practice," will be discontinued.

By order of Major General MACOMB,

R. JONES, Adjutant General.

* House, † Lindsey, † Armistead, § Fenwick.
Walbach, Crane, Bankhead, Eustis.
Gates, Heileman, Brooks, Fanning.

[From the New Orleans Bee of 5th inst.]

Capture of an English armed Schooner.—We understand from a person whom we deem worthy of credence that he learned on board the schooner *Tita*, which arrived here day before yesterday from Mantanzas, that the Spanish revenue cutter, *Retilla*, had boarded and taken, on the coast of Cuba, an English schooner of war. The circumstances were briefly these:—The English vessel taking the Spanish cutter for a slave-trader, as was afterwards ascertained, fired upon her, whereupon she hoisted her colors, which having not been deemed a satisfactory evidence of her real character, a broadside succeeded, upon which an engagement took place, which resulted in the capture of the schooner, whose loss amounted to 14 men.

Sudden Death.—A man named James Brack, a clerk employed at the office of the Old Countryman, in passing down Frankfort street, about one o'clock yesterday afternoon, suddenly fell upon the sidewalk opposite the Pewter Mug, in a state of insensibility. He was immediately taken into an adjacent house, and efforts were made to revive him, but without success.—[Standard.]

The river St. Lawrence was open on the 14th of April, from Montreal to Quebec.

Capt. Lewis, of the schooner Northampton, arrived yesterday from the Island of St. Vincent, re-

ports that on the day he sailed, three successive shocks of an earthquake were felt there, one of which was extremely violent, and it was supposed did great damage. The Sea and the harbor was so high that it was with great difficulty that the vessels at anchor were prevented going ashore. A number of negro houses were destroyed, but the Captain had an opportunity of ascertaining whether any lives were lost.—[Jour. Com.]

Destruction of a Pirate and Death of an Officer and several men on board an English Man of War.—The New Bedford Mercury, says that Capt. Bennet of the ship London Packet, arrived there on Saturday, gives information that on the 3d March, off Ascension Island, he was spoken by his Britannic Majesty's man of war Carlow, and was informed that on the coast of West Africa, the Carlow fell in with a suspicious looking vessel armed with five guns and a carronade on a pivot amidships. The Carlow sent her boats to board, when the boats got along-side they found the vessel deserted, and in a few minutes after she blew up, killing one officer and several men belonging to the C. It was supposed that the explosion was caused by a match being led to the magazine and fired before the piratical crew left her. The English commander immediately sent his boats on shore and succeeded in capturing nineteen pirates, who were then in irons on board his ship.

It was ascertained from articles on board that this was the vessel that had robbed the brig Mexican of Salem of goods and \$25,000 in specie. The pirates were Spaniards and Portuguese. The commander of the Carlow sent letters by Capt. Bennet to the owners of the Mexican.

MONMOUTH N. J.—One or two vessels laden with oranges, came ashore near Squan, sometime last week, in consequence of which, we have had oranges here by wagon loads.

The Susquehanna Democrat (Pa.) of 16th April, has this significant editorial article:

There are several rumors in circulation too ridiculous to mention.

An Act relating to the Court of Common Pleas for the City and County of New York. Passed April 11, 1834.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

§ 1. An Associate Judge shall be appointed for the Court of Common Pleas for the City and County of New York, in the same manner as Judges of the several Courts of Common Pleas of this State now are appointed, who shall be a Counsellor of the Supreme Court, and shall have the same power to hold said Court of Common Pleas as the first Judge thereof, and may equally with him as presiding Judge, authenticate the records of said Court.

§ 2. Such Associate Judge shall receive a like trial fee, for every cause noticed for trial in said Court as is allowed in the Superior Court of the said city, to be received in the same manner and with the same restriction.

§ 3. Each term of said Court may continue until the end of the fourth week after the commencement thereof, and a new panel of Jurors may, by order of said Court, be summoned for the two last weeks of said term, and any writ or process may be tested on any day in term, and be made returnable on any other day in the same term or the next term; provided, however, that said Court may be adjourned on any day previous to the expiration of term, and also from any one day in the term over to any other day in the same term.

§ 4. The said first Judge and Associate Judge shall, except when sick or absent from said city, have sole and exclusive authority at chambers touching any suit, security, judgment or proceeding in said Court.

§ 5. All the powers now vested in the said first Judge by virtue of the Statutes of this State relative to any legal proceedings, are hereby given also to the said Associate Judge; and any proceeding commenced by one of said Judges, may, in his absence, be continued, decided, and perfected by the other of said Judges.

§ 6. The said Associate Judge shall have the same power as the said first Judge to hold, and in the same manner preside, in the Courts of General Sessions of the peace in and for the City and County of New York.

§ 7. This act shall continue in force for the term of five years from its passage.

§ 8. This act shall take effect immediately after the passage thereof.

State of New-York, Secretary's Office.

FIELD FLOWERS.—By Thomas Campbell.

Ye field flowers! the gardens eclipse you, 'tis true?
Yet, wildings of nature, I doat upon you,
For ye wait me to summers of old,
When the earth teemed around me with fairy delight,
And when daisies and buttercups gladdened my sight,
Like treasures of silver and gold.

I love you for lulling me back into dreams
Of the blue highland mountains and echoing streams,
And of broken glades breathing their balm,
While the deer was seen glancing in sunshine remote,
And the deep mellow crush of the wood-pigeon's note,
Made music that sweetened the calm.

Not a pastoral song has a pleasanter tune
Than ye speak to my heart, little wildings of June:
Of old ruinous castles ye tell,
Where I thought it delighted your beauties to find
When the magic of Nature first breathed on my mind,
And your blossoms were part of her spell.

Ev'n now what affections the violet awakes:
What loved little islands, twice seen in their lakes,
Can the wild water-lily restore;
What landscapes I read in the primrose's looks,
And what pictures of pebbled and minnowy brooks,
In the vetches that tangled their shore.

Earth's cultureless buds, to my heart you were dear,
Ere the fervour of passion, or ague of fear,
Had scathed my existence's bloom:
Once I welcome you more, in love's passionless stage,
With the visions of youth to revisit my age,
And I wish you to grow on my tomb.

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at \$3; or in semi-monthly form, of 32 pages, stitched in a cover of colored paper, at \$4 per annum, in advance. The first and second volumes of the Journal may be had in two parts to the year, either stitched in covers or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts \$1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. MINOR, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its second year. It will be continued in a manner altogether superior to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and for several years, proprietor and publisher of the LONDON MECHANICS' MAGAZINE, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The first year, or two first volumes, having been stereotyped, may now be had either in numbers, or bound in boards—either at wholesale or retail. Price \$1 50 per vol. in numbers, or \$1 75 in boards, or \$3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the second volume of a new series. It is published once a month, in quarto form of 32 pages to each monthly number, at \$3 per annum in advance. The last volume may be had either stitched in a cover, so as to be sent by mail, or in boards. Price, stitched, \$3 25; in boards, \$3 50. Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or 96 extra pages to the volume. Published at No. 35 Wall street, N. Y. D. K. MINOR, Proprietor.

Jan. 22, 1834.

A QUARTERLY JOURNAL OF AGRICULTURE AND MECHANICS will hereafter be published at the same office. Each quarterly number will contain about 300 large octavo pages, embracing the most choice articles from the best agricultural and mechanical publications both in America and Europe. It will form 2 volumes to the year, of about 640 pages each, and will be put up like other quarterly publications, so as to be sent by mail. Price, \$5 per annum, in advance.

N. B. A small edition only will be published.

Also, the NEW-YORK AMERICAN, daily, tri-weekly, and semi-weekly.

All Letters and Communications for the above publications, may be addressed, free of postage, to
D. K. MINOR.

RAILROAD TURNOUTS, REVOLVING PLATFORMS AND SIDELINGS.

The subscriber having been for some years engaged in constructing turnouts, and inserting the necessary switches and fixtures appertaining to the same, on the Baltimore and Ohio Railroad,—and as those works on that road will be shortly completed, he is desirous of being employed by any Railroad Company requiring work of the above description.

He will either contract at a fixed price to execute the work, he providing all the necessary materials and fixtures, or otherwise,—or he will engage himself at a stated salary.

In relation to his abilities and general character he begs to refer any Company, disposed to engage him, to the Baltimore and Ohio Railroad Company.

Letters can be addressed to him at the Office of Construction Baltimore and Ohio Railroad, Baltimore.

a26 6t

REUBEN ALER.